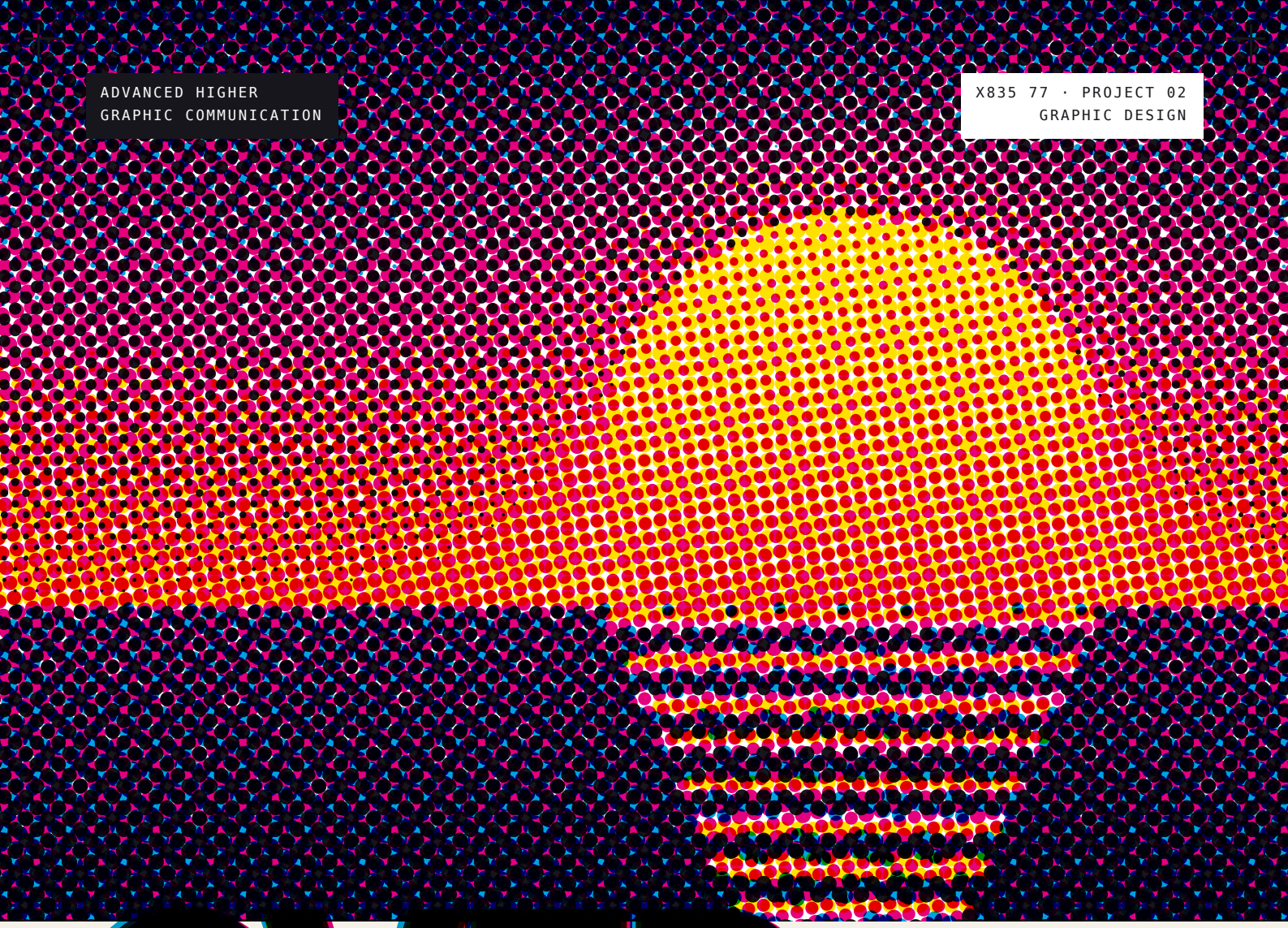
ADVANCED HIGHER
GRAPHIC COMMUNICATION

X835 77 · PROJECT 02
GRAPHIC DESIGN



OVER PRINT

Course Notes

Commercial & Visual Media Graphics · Graphic Ownership · Project Planning

Colour	Resolution	Bleed	Screen angles
CMYK + 1 spot	**300 dpi**	**3 mm**	**C15° M75° Y0° K45°**

designclass
design | engineering | technology

BEFORE YOU START

How to use this booklet

These notes cover the **commercial and visual media graphics** content of the Advanced Higher Graphic Communication course (2026–27 specification, version 4.0), plus **graphic ownership** and **project planning**, which apply to both areas of study.

MARGIN NOTES
Yellow **tips** and pink **warnings** quote the marking instructions and course reports from the 2022–2026 papers, so you can see what earns marks and what doesn't.

QUICK CHECKS
Each chapter ends with exam-style questions. Answers are in the Teacher Marking Instructions. A type-in version of this booklet lets you answer on screen.

GLOAMIN'
A fictional festival used as the worked example throughout. Its brand, artwork and brief are in the asset pack, ready for the mini-projects.

Where this content is assessed

COMPONENT	MARKS	WHAT THIS BOOKLET SUPPORTS
Question paper (2 h 30)	90 · 50%	Every chapter. Questions mix technical and commercial contexts.
Project (20 × A3)	90 · 50%	Chapters 2–9 feed the CVMG half; chapter 10 explains how it's marked.

Specification map

COURSE SPECIFICATION TOPIC	CHAPTER
Creators and users (commercial and visual media)	01
Design elements and principles	02
Desktop publishing: techniques, planning strategies, file types, PDFs	03
Graphics technologies: pre-press quality and standard checks	04
Graphics technologies: printing technologies and terminology	05
Graphics technologies: environmental outcomes (and society)	06
Animation: techniques, post-editing, file types	07
Graphic ownership	08
Graphic project planning	09
Course assessment: project (CVMG) and question paper	10 · 11

The technical graphics area of study (CAD, drawing standards, built environment, simulation, rendering) is covered in the other DesignClass AH projects.

CONTENTS

Inside

01	Creators & Users	p.5
02	Design Elements & Principles	p.8
03	Desktop Publishing	p.21
04	Pre-press	p.28
05	Printing Technologies	p.37
06	Environment & Society	p.48
07	Animation	p.52
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09	Graphic Project Planning	p.65
10	The AH Project	p.68
11	Exam Technique	p.72
12	Glossary	p.75

THE CLIENT



GLOAMIN’

FESTIVAL OF LIGHT & SOUND
STONEHAVEN · 15–17 OCT 2027

A fictional three-day festival of light and sound on Stonehaven's harbour and clifftop: lantern parade, projection show, drone lights, silent ceilidh.

THIS BOOKLET AS A PRINT JOB
Format: A4 portrait, self cover
Colour: CMYK + 1 spot
Images: 300 ppi, CMYK
Bleed: 3 mm · PDF/X-4
Typefaces: Inter Display, Inter, DejaVu Sans Mono

MEET THE CLIENT

GLOAMIN': brand guidelines (extract)

GLOAMIN'
FESTIVAL OF LIGHT & SOUND · STONEHAVEN

Gloamin' (Scots): twilight, the time between sunset and dark. The festival celebrates light in the darkest part of the year on the north-east coast. The mark is a setting sun behind a clifftop castle; its sea is drawn with **negative space**, its gaps grow by the **golden ratio**, and its rays give **radial balance**. Every design decision in the brand is explained somewhere in this booklet.

Colour

Twilight Indigo	Dusk Violet	Gloamin' Pink	Ember	Gold	Haar
HEX #23214F	HEX #5B3A9E	HEX #FF4F8B	HEX #FF8A3D	HEX #FFC857	HEX #E4E2EC
C92 M88 Y25 K38	C75 M85 Y0 K0	C0 M80 Y20 K0	C0 M55 Y80 K0	C0 M22 Y72 K0	C10 M8 Y2 K0
PANTONE 2766 C	PANTONE 2665 C	PANTONE 806 C (fluorescent)	PANTONE 1575 C	PANTONE 123 C	—

Fictional brand specification for teaching. CMYK values are the brand's chosen process builds; Pantone references are chosen visual matches. Always check against a printed guide.

Typography

GLOAMIN' Aa

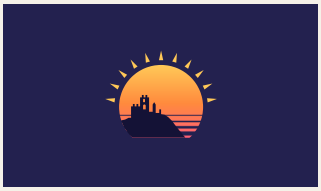
TeX Gyre Adventor Bold · display and wordmark (GUST Font Licence)

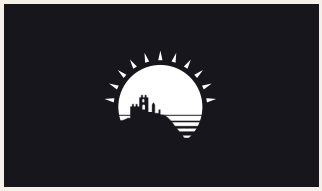
Festival of Light & Sound

Inter Regular, Semibold and Black: headings, body and interfaces (SIL Open Font Licence)

Do / don't

- Use the reversed mark on dark backgrounds
- Keep clear space equal to the sun's radius around the mark
- Use the one-colour mark for vinyl cutting and screen printing
- Don't recolour, stretch or add effects to the mark
- Don't place the colour mark on busy photographs





Creators & users

Every commercial graphic passes through many hands: the client who pays for it, the designers who make it, the technicians who produce it and the audience who sees it. Each needs something different from the graphic.

1.1	Who creates and uses CVMG graphics
1.2	Following one brief through the team
1.3	Writing about roles and needs

01

1.1

Who creates and uses commercial graphics

The course specification names nine **creators and users** that can appear in the question paper. For each one you need to know their **role** and their **needs**: what a graphic must do or contain to be useful to them.

Clients

Role: Commission and pay for the graphics; approve proofs.

Needs: Graphics that meet the brief, budget and deadline; protect and strengthen their brand; clear proofs to sign off.

Graphic designers

Role: Turn the brief into visual solutions: identity, layouts, illustrations.

Needs: A clear brief, brand guidelines, assets (logos, images, copy), technical specs and a realistic timescale.

Advertisers

Role: Plan and place campaigns that persuade an audience.

Needs: Eye-catching graphics adapted for each channel (billboard, social, print) with a clear message and call to action.

Sales & marketing

Role: Use graphics to promote and sell: point-of-sale, social media, merchandise.

Needs: Consistent branding across every item; fast turnaround; graphics that can be measured and updated.

Print technicians

Role: Prepare files and run presses and finishing.

Needs: Print-ready files: CMYK/spot colours, 300 ppi, bleed, crop and registration marks, fonts embedded or outlined, and a full print specification.

Web designers

Role: Build and maintain websites.

Needs: Web-optimised RGB images, scalable SVG logos, consistent UI assets, accessible colour contrast and alt text.

Interactive media designers

Role: Design apps, kiosks, games and touch screens.

Needs: A planned navigation flow (wireframes), icons and buttons in the right formats and sizes, accessibility features.

Animators

Role: Create motion graphics, promos and explainer animations.

Needs: A storyboard with timings, layered or vector assets, a brand style guide, audio and the target platform and file type.

General public

Role: See, use and respond to graphics.

Needs: Clear, legible, accessible, honest graphics that are quick to understand, whatever their age, language or ability.

CREATOR

Someone who produces or prepares a graphic (designer, animator, print technician).

USER

Someone who reads, uses, buys or responds to a graphic (client, public, sales team). Many people are both.

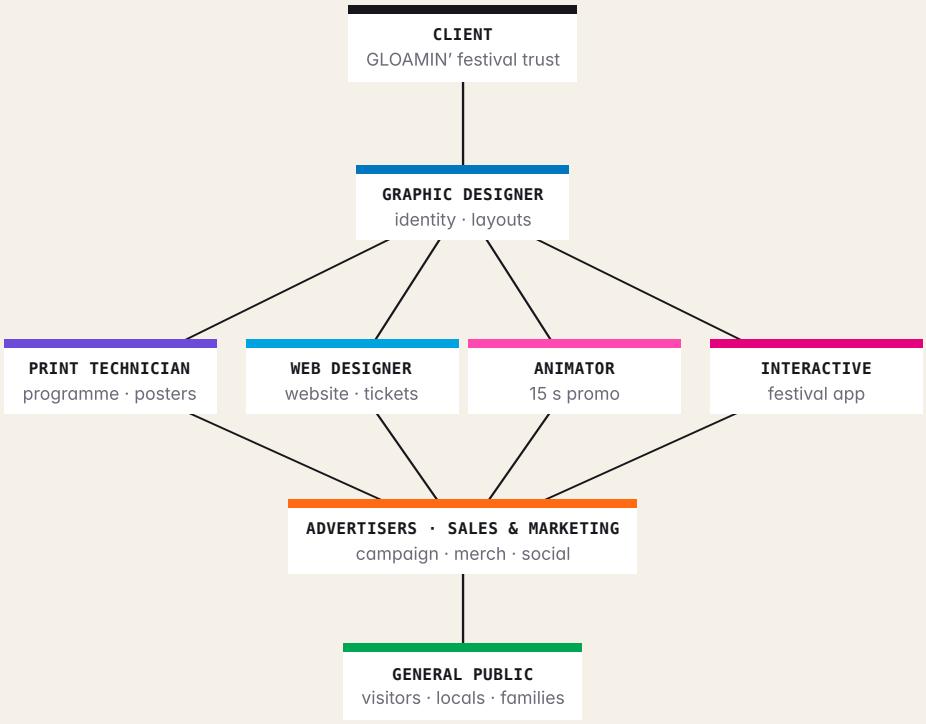
FOR THE PROJECT

The specification adds artists, creative industries, retailers, and cinematic, TV, electronic and interactive media. Your analysis should identify which of these audiences your project serves.

1.2

Following one brief through the team

GLOAMIN' is a fictional festival of light and sound in Stonehaven (used throughout this booklet). Here is how one brief, *"launch the 2027 festival"*, moves through the creators and users.



Roles in the project (additional)

AUDIENCE	ROLE AND NEEDS
Artists	Original illustration and artwork; need clear briefs, credit and fair licensing terms.
Creative industries	Agencies, studios and freelancers; need efficient workflows and file standards.
Retailers	Point-of-sale displays and packaging; need eye-catching shelf impact and print durability.
Cinematic, TV, electronic & interactive media	Need correct frame rates, aspect ratios, resolutions and file types for each platform.

1.3

Writing about roles

Exam questions ask you to **describe the role** of a professional, or to **explain the needs** of an audience, in a given context.

ROLE + NEED + WHY

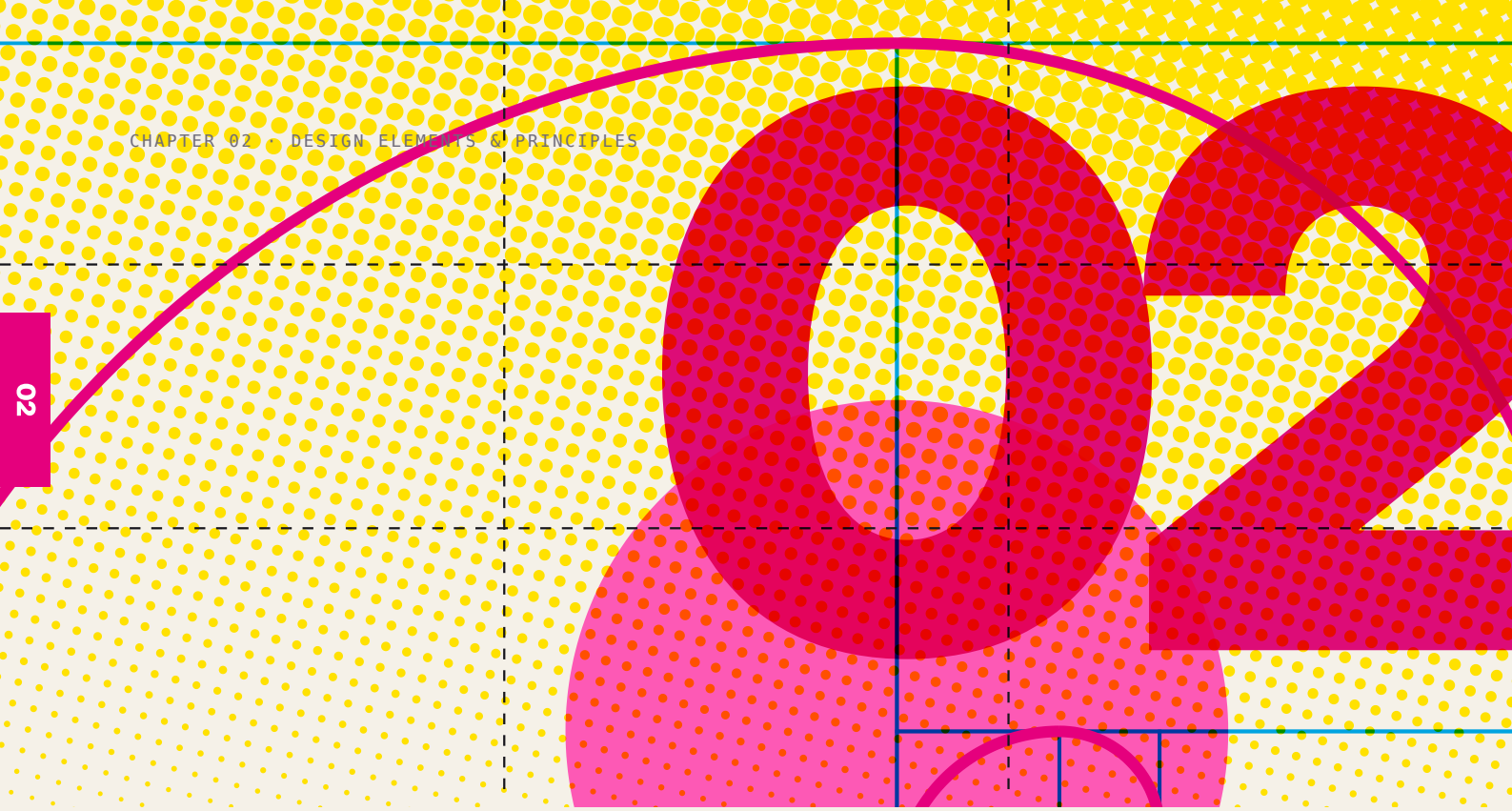
A print technician needs the programme supplied as a PDF/X with 3 mm bleed and crop marks, so that it can be trimmed accurately without white edges.

TWO MARKS FOR DEPTH

In 2024 (a built-environment question about professionals) the MI gave 2 marks where a candidate described a professional's role in **two different aspects** of the project. The same principle applies to CVMG roles.

BE SPECIFIC TO THE CONTEXT

"Graphic designers design graphics" earns nothing. Say **what** they would produce for **this** client and **why**.



Design elements & principles

At Higher you learned the core toolkit. Advanced Higher adds eight more demanding terms and expects you to explain **how** each one is used and **what it achieves** for a specific audience.

2.1	Building on Higher
2.2	Focal point
2.3	Silhouettes
2.4	Pace
2.5	Negative space, white space & reverse
2.6	Golden ratio
2.7	Rule of thirds
2.8	Dynamic effects
2.9	Radial balance
2.10	Analyse like an examiner

2.1

Building on Higher

Everything from Higher still counts. The marking instructions accept **any** element or principle from the course specifications at **any level**, provided you explain how it is used. Advanced Higher adds eight more.

The Higher toolkit (still examinable)

Elements

line · shape · texture · value · mass / weight · colour

Colour theory: warm, cool, contrast, harmony, accent, advancing and receding colours.

Principles

alignment · balance · contrast · depth · dominance · emphasis · proportion · rhythm · unity / proximity · white space · grid structure

The Advanced Higher eight

ELEMENT
Pace
How quickly the eye travels through a layout or sequence.

ELEMENT
Focal point
The point the eye goes to first.

ELEMENT
Silhouettes
Solid outline of an identifiable object or living thing.

PRINCIPLE
Golden ratio
Proportion of 1 : 1.618 used to size and place content.

PRINCIPLE
Rule of thirds
A 3 × 3 grid; key content sits on the lines or intersections.

PRINCIPLE
Dynamic effects
Techniques that suggest movement or energy.

PRINCIPLE
Radial balance
Content arranged around or radiating from a centre.

PRINCIPLE
Negative space
Background space shaped so it forms new content.

How E&P marks are earned

Every E&P question is marked the same way. A mark needs three things in one sentence:

1. **Name** the element or principle (if the question has not already named it).
2. **Locate** it: say exactly where and how it appears *in this graphic*.
3. **Effect**: say what it achieves for *this* audience or purpose: easier navigation, a clearer message, more visual impact.

> IDENTIFIES ONLY · 0 MARKS
> Contrast has been used on the buttons.

> NAME + LOCATE + EFFECT · 1 MARK
> The orange **Buy tickets** button contrasts with the dark indigo background, so the user can see at a glance where to tap to book.

EXAMINER SAYS
In 2025, marks for a webpage question went only to answers that said how each element or principle **made the page easier to navigate**, not to answers that just described it.

DON'T REPEAT YOURSELF
If a question asks for four different elements or principles, two answers about *line* earn one mark. The same feature can support two principles, but each description must be different.

GRAPHIC ITEM
Any single piece of graphic communication: a poster, app screen, logo, programme spread, animation frame.

VISUAL IMPACT
How strongly a graphic grabs and holds attention. Examiners link it to contrast, scale, colour, focal point and dynamic effects.

Read the constraint.
Questions sometimes rule things out, e.g. *"Do not refer to dynamic effects in your answer."* (2025). Anything you write about them scores nothing.

2.2

Focal point

The **focal point** is the part of a graphic the eye goes to first. It sets the reading order (the **visual hierarchy**) and gets the key message across in the second or two before a viewer decides whether to keep looking.

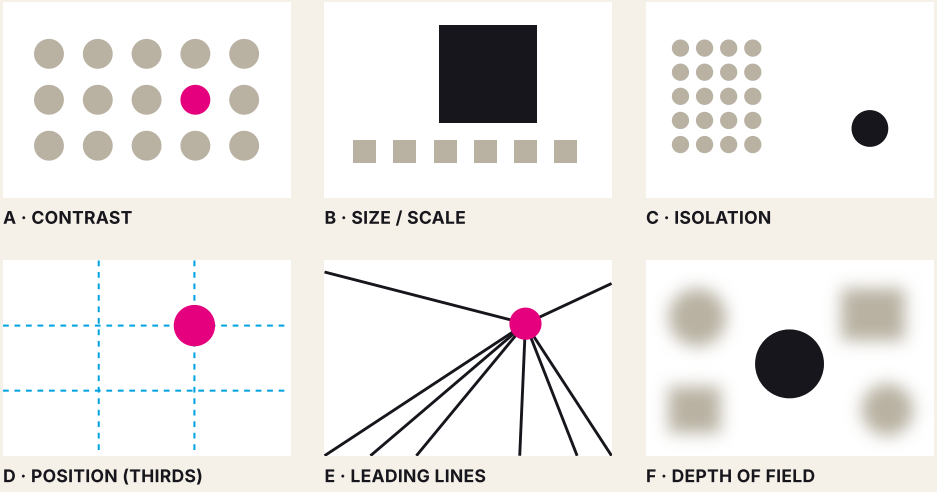


FIG 2.1 · Six ways to make one item win attention. Most real focal points combine two or three.

Creating a focal point

- **Contrast**: a warm colour against cool ones, light against dark, a texture against flat colour.
- **Size and dominance**: the largest item usually wins. Scale shows importance.
- **Isolation**: surrounding an item with white space removes competition.
- **Position**: placed on a rule-of-thirds intersection, a golden section, or the centre of a radial layout.
- **Leading lines and direction**: perspective lines, arrows, a road or a person's gaze lead the eye to the item.
- **Depth of field**: one subject is sharp and everything else is blurred.

In the GLOAMIN' poster

The setting sun and castle are the focal point. They are the largest item and the brightest warm colour against a cool, dark sky, and they sit on the vertical golden-section line. The rays point inwards, which pulls the eye there too. The headline is a deliberate **secondary** focal point, read next, and the ticket web address is third.

Too many focal points cancel each other out. If the headline, dates, sun and crowd were all the same strength, nothing would lead and the viewer would not know where to start.

VISUAL HIERARCHY
The order in which a viewer notices and reads content: primary → secondary → tertiary.

TWO-PART QUESTIONS
Exam questions can ask **how** a focal point is created (technique + location) and then **why** it helps communication (the effect on the audience). Answer each part separately.

STRONG · HOW + WHY
The climber's face is sharp while the background is blurred (depth of field), so the young graduates the advert targets look at her determined expression first, and that matches the message about drive.

DIGITAL MEDIA
On a web page or app screen the focal point is usually the main **call to action**. A bold, brightly coloured button draws the eye before the user explores the rest.

2.3

Silhouettes

A **silhouette** is a solid, single-tone shape of an **identifiable object or living thing**, recognised by its outline alone. There is no internal detail: the outline does all the work.



FIG 2.2 · Layered silhouettes in progressively lighter tones create depth (aerial perspective). The castle and crowd read instantly with no detail.

Why designers use silhouettes

USE	EFFECT ON THE AUDIENCE
Instant recognition	A simple outline is identified in a fraction of a second, even at icon size on a phone.
Communication without words	A lantern, music note or drone icon is understood by young children and by visitors who don't read English.
Contrast and drama	A dark shape against a bright sunset or spotlight gives strong visual impact and mood.
Depth	Overlapping silhouettes in different tones or transparencies suggest distance: lighter = further away.
Inclusivity	A figure with no features, skin tone or clothing detail can represent anyone.
Easy reproduction	One flat colour suits screen printing, vinyl cutting and small vector files.





FIG 2.3 · Choose the most characteristic view: a cup reads from the side, not from above. App icons are silhouettes.

MUST BE IDENTIFIABLE

The 2022 course report: a silhouette must represent an **identifiable object or living thing**. A black rectangle or an abstract blob is a shape, not a silhouette.

NOT THE SAME AS NEGATIVE SPACE

In 2024 some candidates named silhouettes when the question asked about negative space. A silhouette is a **solid shape**; negative space is the **background** shaped into new content. One graphic can use both: the GLOAMIN' castle is a silhouette, and its windows are negative space.

MARKING PATTERN

Recent MIs credit silhouettes that make something **clear without language**, create **contrast**, create **depth** through tone, or **anonymise** figures so they appeal to everyone. Always link to the audience.

2.4

Pace

Pace is the speed at which a viewer moves through a graphic, or through a sequence of pages or screens. Designers control it with the amount, size and density of the content.



FAST PACE: BIG IMAGE, FEW WORDS



SLOW PACE: DENSE TEXT, SMALL IMAGES

FIG 2.4 · Same page size, different pace. Image-led spreads are scanned in seconds; text-led spreads ask the reader to slow down.

Fast pace

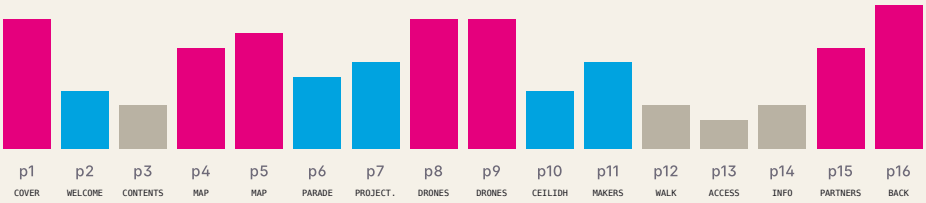
- Large images, few words, short headlines
- Bold icons and plenty of white space
- One idea per page or screen
- Suits posters, social posts, app home screens, young audiences

Slow pace

- Dense text, more columns, smaller images
- Tables, timetables, detailed captions
- Encourages careful reading
- Suits access info, terms, technical detail

Pace across a multi-page document

A programme that is fast on every page feels thin; one that is slow on every page feels hard work. Designers plan pace on a **flat plan**, alternating image-led spreads with information spreads so the reader stays engaged.



PACE ACROSS A 16-PAGE PROGRAMME: TALL = FAST (IMAGE-LED) · SHORT = SLOW (READING)

FIG 2.5 · A flat plan with pace marked for each page of the GLOAMIN' programme.

Pace in digital media

On screen, pace is controlled by the words per screen, the size and number of buttons, scroll length, and the timing of transitions and animations. Short titles and clear icons **increase** pace: users understand each screen faster and move on with fewer taps.

FLAT PLAN

A thumbnail map of every page in a multi-page document, showing what goes where. It is used to plan content, pace and page count.

COURSE REPORT 2026

Many candidates identified pace in an app but **did not explain how it was applied**. Name the feature that creates the pace (minimal words, icons, navigation wheel) and say why that helps this audience.

STRONG · HOW + EFFECT

The home screen uses short one-word titles and large silhouette icons, so the pace is fast. Young children can find their sport without reading much, which makes the app quicker to use.

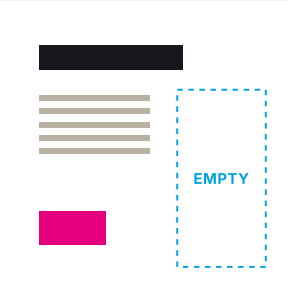
PACE ≠ RHYTHM

Rhythm (Higher) is the **repetition** of elements at regular intervals. Pace is the **speed** of reading. Equal spacing gives rhythm; the amount of content sets the pace.

2.5

Negative space, white space & reverse

These three are confused more than any other terms in the course. All three involve "empty-looking" areas, but each does a **different job**.



WHITE SPACE
empty: rest + clarity



NEGATIVE SPACE
background forms new content



REVERSE
light on a dark ground

FIG 2.6 · Left: white space. Centre: negative space, where the background cuts through the sun to create the sea. Right: reverse.

WHITE SPACE

Areas deliberately left **empty**, of any colour. It separates content, gives the eye a rest, adds a sense of quality and makes key items stand out. Remove it and the layout is busier, but **no information is lost**.

NEGATIVE SPACE

The background deliberately **shaped to form new content**: an extra image, letter or meaning made from the space between or within shapes. Remove it and **the extra content disappears**.

REVERSE

Light text or graphics on a dark background, e.g. white type on black. It gives contrast and impact, but it is not negative space: the white text is the content.

The GLOAMIN' mark: negative space at work

The horizontal cuts through the lower half of the sun let the background colour through. On their own they are just gaps, but together they read as **waves and a reflection on the sea**: new content made from nothing. The arched windows in the castle are negative space too. Fill them in and the castle becomes a flat block.

A well-known real example is the arrow hidden in the gap between two letters of the FedEx wordmark.

The two-second test
Ask: **"If I filled this area in, would I lose information?"** If yes, it is **negative space**. If the layout simply gets more crowded, it is **white space**. If the area is light **text or image** on a dark ground, it is **reverse**.

COURSE REPORT 2022

"Negative space is not another name for white space." Negative space adds new content; white space is the absence of content.

MARKING INSTRUCTIONS 2024

When asked about negative space across a hotel's range of graphics, answers about **white text** were not accepted, because that is reverse. White areas that are simply **part of a picture** were not accepted either.

HIGHER VS AH

White space is a Higher principle. Negative space is the new AH principle. If an AH question names **negative space**, an answer about white space scores nothing.

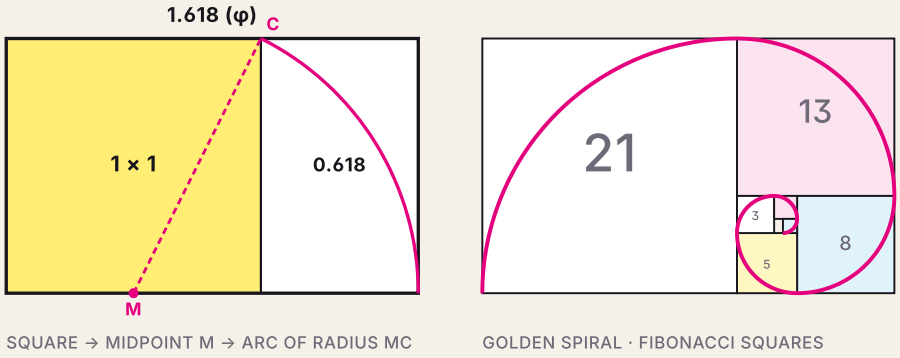
FIGURE–GROUND

The relationship between a shape (figure) and its background (ground). Negative space designs make the ground readable as a second figure.

2.6

Golden ratio

The **golden ratio**, φ (phi), is approximately **1 : 1.618**. Two lengths are in the golden ratio when the longer divided by the shorter equals the whole divided by the longer: (a + b) / a = a / b ≈ 1.618.



SQUARE → MIDPOINT M → ARC OF RADIUS MC

GOLDEN SPIRAL · FIBONACCI SQUARES

FIG 2.7 · Constructing a golden rectangle, and the golden spiral drawn through its nested squares.

Constructing a golden rectangle

1. Draw a square (side 1).
2. Mark the midpoint **M** of the base.
3. Set your compass to the distance from M to the opposite top corner **C**.
4. Swing an arc from C down to the extended base line. The new base is 1.618 long.
5. Complete the rectangle. Cut off a square and the leftover piece is another golden rectangle, and so on: that is where the spiral comes from.

Fibonacci numbers

In the sequence 1, 1, 2, 3, 5, 8, 13, 21, 34… each number is the sum of the previous two. The ratio of neighbours gets closer and closer to φ (21 ÷ 13 = 1.615; 34 ÷ 21 = 1.619). Designers use Fibonacci numbers as a quick way to get golden proportions with whole numbers, e.g. 8 mm and 13 mm margins.

Be evidence-based. You will read claims that φ is "the most beautiful proportion". Controlled studies have **not** shown a consistent preference for it. In design its real value is practical: it gives a **consistent system** of proportions, which creates harmony and a clear hierarchy of sizes.

φ (PHI)

≈ 1.6180339… An irrational number: it never ends or repeats. Use 1.618 in calculations.

Quick maths

Split a 210 mm A4 width in the golden ratio:
210 ÷ 1.618 = 129.8 mm (main column)
210 − 129.8 = 80.2 mm (side column)
Check: 129.8 ÷ 80.2 = 1.618 ✓

GOLDEN SECTION

The point that divides a line in the golden ratio, about **0.618** of the way along (or 0.382 from the other end). Designers place key items on these lines.

2.6 continued

Applying the golden ratio



FIG 2.8 · GLOAMIN' poster with golden sections overlaid.

1 · Placement

The sun's centre sits on the vertical golden section (0.618 of the width), not dead centre, which gives an asymmetrical but balanced layout. The headline and date block fill the top 0.382 of the height.

2 · Proportion of blocks

Column widths, image boxes and margins can be sized in 1 : 1.618 steps (e.g. a 129.8 mm text column beside an 80.2 mm image column on A4).

3 · Type scale

Multiply by φ to set a hierarchy of type sizes: **9 pt** body → **14.6 pt** subhead → **23.6 pt** heading → **38.1 pt** title.

4 · Logo construction

In the GLOAMIN' mark each sea-line gap is φ times the one above it (1.6 → 2.6 → 4.2 → 6.8 units), so the sea lines thicken as they come towards the viewer and crowd together towards the horizon, giving a sense of distance.

5 · Image cropping

Crop photographs so the subject lands on a 0.382 / 0.618 line rather than in the middle.

Writing a golden-ratio answer

Marking instructions demand precision: answers *"must detail exactly how the ratio is applied and where"* (2024). The 2026 course report noted that most candidates spotted the golden ratio but **did not explain how it contributes to hierarchy or proportion**. So say **which item**, **what is proportioned** (size, position, spacing) and **what that achieves**.

VAGUE · 0 MARKS

The golden ratio has been used on the key card to make it look balanced.

WHICH + WHAT + EFFECT · 1 MARK

The room number box and image box on the back of the key card are sized 1 : 1.618, so the room number is clearly dominant and read first, while the layout still looks balanced.

WHERE EXAMINERS HAVE LOOKED

Key cards (2024), an app home screen (2026). Look for **boxes, images and text blocks that step up in size**. Each step is a possible golden ratio answer.

HIERARCHY

Sizing content so that the most important item is largest and reads first. Golden steps (×1.618) give an obvious but harmonious difference between levels.

NOT A LINE OF SIGHT

In 2024 many candidates described lines of sight. Talk about **proportion, size and position** instead.

2.7

Rule of thirds

Divide an image or layout into a **3 × 3 grid** with two equally spaced horizontal and two vertical lines. Placing key content **on the lines**, or on the four intersections (often called power points), gives a more natural and dynamic composition than centring everything.

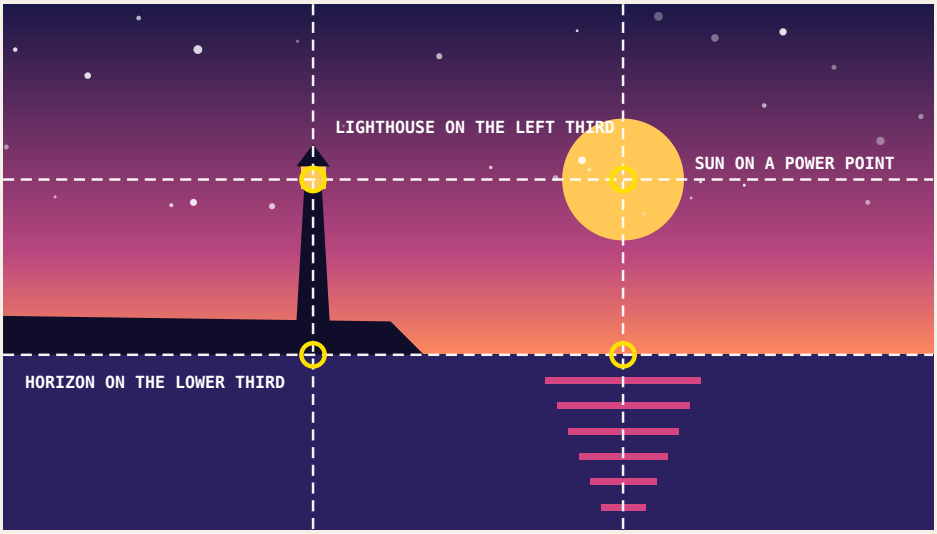


FIG 2.9 · Sun on the upper-right power point, lighthouse on the left third line, horizon on the lower third.

Where it is used

- **Photography and illustration**: place the subject on a power point and the horizon on a third line.
- **Page and screen layout**: divide pages into thirds for image and text blocks.
- **Video and animation**: frame a presenter on a third, with **look room** in the direction they face.
- **UI design**: hero banners, with the call to action on a third.

What it achieves

- Creates a **focal point** without dead-centre symmetry.
- Leaves space for text, so a photo and headline can share a layout.
- **Leads the eye** across the image from one third to the next.
- Feels balanced but less static than a centred layout.

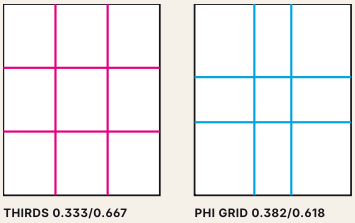


FIG 2.10 · Rule of thirds vs phi grid: similar idea, slightly different lines.

STRONG · 2025 STYLE

In image 1 the cyclist sits on the left third of the frame, which draws the eye to him first and leaves space on the right for the headline.

ONE OF EACH

If a question asks how depth of field **and** rule of thirds have been used, two rule-of-thirds answers only score once.

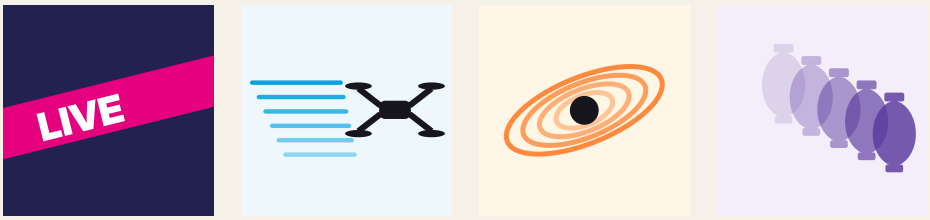
NO NEED FOR FRACTIONS

MIs accept descriptions that show understanding of position (e.g. “in the lower-right third”) without stating 1/3 or 2/3.

2.8

Dynamic effects

Dynamic effects are techniques that create a sense of **movement, speed or energy** in a graphic, so that a still image feels as if it is in motion or about to move.



DIAGONAL / TILT · SPEED LINES / BLUR · TILTED ELLIPSES · REPETITION / ECHO

FIG 2.11 · Four ways of suggesting movement in a static graphic.

TECHNIQUE	HOW IT SUGGESTS MOVEMENT
Diagonals and tilt	Angled bands, type or images look unstable, as if falling or moving. Horizontals and verticals look still.
Motion blur and speed lines	Blurred trails or streaks behind an object show where it has come from, e.g. blurred tarmac and barriers behind a racing car.
Tilted ellipses	Ellipses on rotating parts such as wheels or a spinning lantern suggest rotation, especially when tilted.
Repetition and echo	Fading copies of a shape along a path show a sequence of positions (ghosting).
Directional shapes	Triangles, chevrons and arrows point the way. Shapes cut off at the edge seem to continue moving out of frame.
Digital effects	Pulsing, flashing or fading elements in an interface, e.g. a pulsing "you are here" dot on a map.

The GLOAMIN' poster uses dotted trails behind three drone lights, so the drones seem to be sweeping across the sky.

WHAT IS NOT A DYNAMIC EFFECT

The object itself moving. "The bike is an object that moves" scored nothing (2025).
A colour change on its own. Several candidates gave this in 2025.
Depth of field. In 2023 most candidates mixed up blur for depth with blur for movement: motion blur follows the direction of travel, depth-of-field blur doesn't.

STRONG · 2026 STYLE

Diffused blur on the alloy wheels makes them look as if they are spinning, so the car appears to be moving at speed.

INTERFACES COUNT

The specimen paper asked how a dynamic effect was achieved on an app map: a pulsing, fading blue dot that contrasts with the static dots around it.

2.9

Radial balance

Radial balance arranges elements **around, or radiating out from, a central point**, so the visual weight is balanced in every direction, like the spokes of a wheel or the rays of the sun.



FIG 2.12 · App menu wheel: six segments radiate from a central "Now on" hub.



FIG 2.13 · Badge: text on a circular path around the mark, with radiating rays.

What radial balance achieves

- **A natural focal point**: the eye is pulled to the centre where the lines converge.
- **Unity**: items placed around a common centre read as one group.
- **Energy and circular movement**: rays and spokes suggest spinning, radiating light or sound.
- **Easy selection**: in interfaces, options arranged around a dial are equally easy to reach.
- **Meaning**: a circular layout can reinforce a message: the globe, the cycle of recycling, a festival "sun".

Three kinds of balance

TYPE	ARRANGEMENT	FEEL
Symmetrical	Mirrored either side of an axis	Formal, stable, calm
Asymmetrical	Different items of equal visual weight either side	Modern, interesting
Radial	Arranged around a central point	Focused, energetic, unified

COURSE REPORT 2022

Candidates described radial balance as symmetrical. You must **refer to the features that are radially balanced**: name them and the centre they radiate from.

STRONG · 2025 STYLE

The words of the slogan are set on a circular path around the globe image, so they radiate from the planet and keep the reader's focus on the message "Save the Earth".

SPOT IT FAST

Circles of icons, text on a path, sunbursts, pizza slices, clock faces, wheels and dials are all likely radial balance answers.

2.10

Analyse like an examiner



1. **Focal point.** The sun and castle dominate: largest item, warmest colour against the cool sky, so the festival's setting is the first thing seen.
2. **Golden ratio.** The sun's centre sits on the 0.618 vertical line and the information block fills the top 0.382, giving balanced, asymmetrical proportions.
3. **Hierarchy and contrast.** Pink "15–17" contrasts with the indigo sky, so the dates are the second thing read after the headline.
4. **Negative space.** Cuts through the sun let the sky show through as waves and a reflection, adding the sea without extra shapes.
5. **Radial balance.** Rays radiate from the sun, pulling the eye back to the focal point and suggesting radiating light.
6. **Silhouettes.** Crowd silhouettes holding lanterns: anyone can picture themselves there, and the dark shapes frame the bright scene.
7. **Dynamic effects.** Dotted trails behind the drone lights suggest sweeping movement and energy in the night sky.
8. **Pace.** Few words, one big image: the poster is understood in seconds by people walking past.

Try it
Cover the notes on the left. Find **six** elements or principles in the poster and write each as **name + locate + effect**. Then compare with the numbered notes.

HIGHER TERMS ARE WELCOME
Unity (the indigo, pink and gold scheme repeated across headline, dates and sun), alignment (the left-aligned text block) and emphasis are all valid answers too.

WATCH THE IMAGE
Answers must refer to the graphic in the question. Generic definitions, however accurate, do not earn marks.

Evaluating suitability for an audience

Course support notes ask you to **evaluate the suitability** of professional graphics for their audience. A useful structure:

1. **Audience and purpose.** Who is it for, where will they see it, and what must it do (inform, persuade, direct)?
2. **Evidence.** Which elements and principles are used, and where?
3. **Judgement.** Does each one help or hinder that audience? Give the reason.
4. **Improvement.** What single change would most improve it?

QUICK CHECK

Design elements & principles

Answer in full sentences. For explain questions, give the cause **and** the effect. Answers are in the Teacher Marking Instructions.

1 Explain the difference between **white space** and **negative space**. 2

2 State **two** features that make a shape a silhouette. 2

3 A golden rectangle has a short side of 50 mm. Calculate the long side to one decimal place. 1

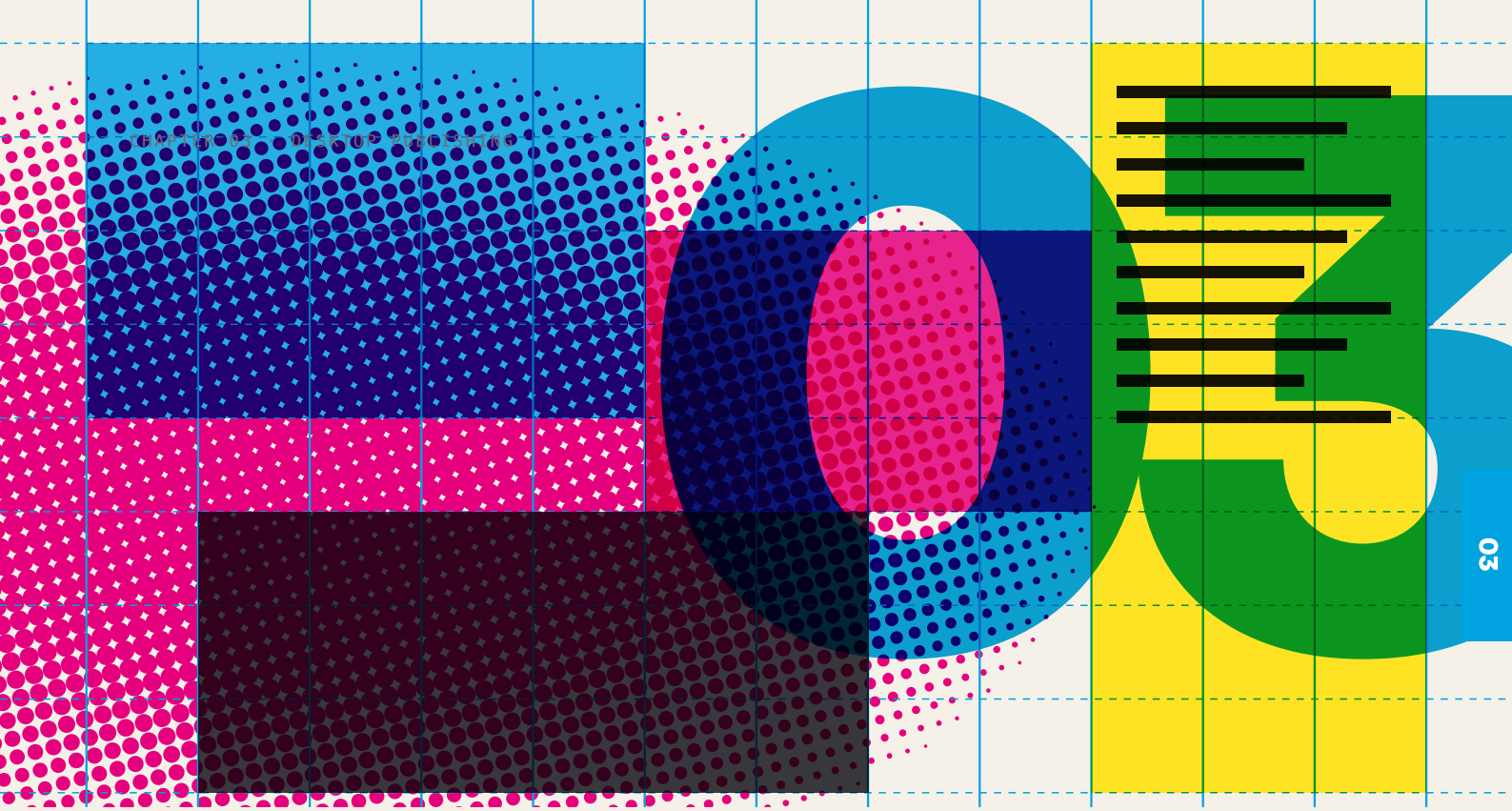
4 Describe **two** ways a designer could make the "Buy tickets" button the focal point of an app screen. 2

5 Explain how pace could be varied across a 16-page festival programme, and why. 2

6 Describe one dynamic effect that could show a lantern swinging, and explain why it works. 2

7 Describe how radial balance could be used in a circular sticker for the festival. 2

8 White text on a black banner reads "SOUND". Name this technique and explain why it is **not** negative space. 2



Desktop publishing

DTP software brings type, images and graphics together into print and screen documents. At AH you need to know the customs that professionals follow in any package, how they plan layouts, and which file types to use and why.

3.1	Techniques, customs & practices
3.2	Planning strategies
3.3	Raster & vector graphics
3.4	DTP file types
3.5	The role of PDFs

3.1

Techniques, customs & practices

Professional layouts are produced in InDesign, Affinity Publisher, QuarkXPress, Scribus or browser tools such as Canva. Menus and names differ, but the **techniques** and **customs** are the same in every package.

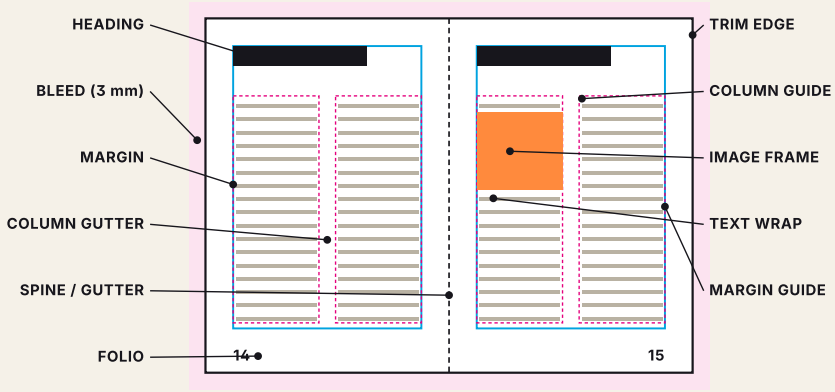


FIG 3.1 · Anatomy of a DTP spread. Most of these terms are from Higher; AH expects you to use them confidently and explain why they matter.

TECHNIQUE	WHAT IT DOES	WHY PROFESSIONALS USE IT
Master / parent pages	Hold repeated items: folios, running heads, grids, logos.	Consistency across every page; one edit updates the whole document.
Paragraph & character styles	Saved type settings (font, size, leading, colour, spacing).	Consistent hierarchy; restyle a whole document in seconds.
Grids & guides, snap	Columns, gutters, margins and a baseline grid.	Alignment and unity; text lines up across columns.
Linked (threaded) text frames	Text flows from one frame to the next.	Long copy reflows automatically when edited.
Text wrap	Text flows around an image or shape.	Integrates images with copy; adds interest.
Layers	Separate levels for background, images, text, notes.	Lock or hide parts; multiple language versions.
Swatches	Named CMYK, RGB and spot colours.	Brand colours are exact and consistent.
Linked images	Placed images stay as separate files.	Small DTP file; edit an image once and it updates.
Preflight & package	Checks for errors, then collects fonts and links.	The printer receives everything needed, error-free.

CUSTOM
An agreed way of working that designers follow, e.g. folios on outer edges, captions near images, no single-line widows at the top of a column.

KERNING · TRACKING · LEADING
Kerning: space between a **pair** of letters. Tracking: even spacing across a **whole word or line**. Leading: space **between lines** (line spacing).

PLACEHOLDER TEXT
Lorem ipsum is a planning tool only. The course reports say placeholder text in a final graphic shows it is **still in development**: it costs marks in the project.

LINKED VS EMBEDDED
A **linked** image stays outside the file (smaller file, but the link must travel with it). An **embedded** image is stored inside (safer to share, bigger file).

3.2

Planning strategies

Professionals plan before they produce. Planning moves from **many quick ideas** to **one detailed, client-approved design**, and each stage has a clear purpose.

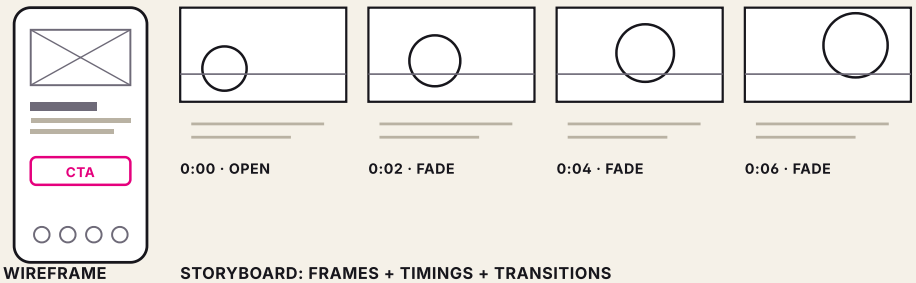


THUMBNAILS ROUGH VISUAL MOCK-UP / PROOF

QUICK + MANY IDEAS ..... FEW + DETAILED + CLIENT-READY

FIG 3.2 · From thumbnails to mock-up for the GLOAMIN' poster.

STRATEGY	WHAT IT IS	WHY IT IS USED
Thumbnails	Small, quick sketches of layout options, manual or digital.	Many ideas in minutes; compare layouts before committing.
Roughs	Larger developed sketches of the chosen idea, roughly to scale.	Test hierarchy, proportion and space.
Visuals	An accurate impression of the final design: colour, type, images.	Show the client what it will look like; get approval.
Mock-ups & proofs	Printed or folded test, or the design shown in context (on a bag, a phone).	Check size, fold, legibility and colour before paying for a print run.
Flat plan	Thumbnail map of every page in a multi-page document.	Plan content, pace, page count and spreads.
Wireframe	Plain boxes showing the structure of a screen.	Plan navigation and layout before styling.
Storyboard	Key frames of an animation with timings and transitions.	Plan sequence and length; share with the client and team.
Mood board	A collage of colours, type, textures and images.	Agree the style and feel with the client early.



WIREFRAME STORYBOARD: FRAMES + TIMINGS + TRANSITIONS

FIG 3.3 · A wireframe for an app screen and a storyboard for a short promo.

DIGITAL THUMBNAILS (2026)

The MI credited reasons such as: a **range of ideas** is created quickly; designs are **easy to edit**; colours, styles and fonts can be **tested**; files can be **sent electronically** to the client for feedback; ideas can be **scaled** into the final version.

TWO EDITS ≠ TWO REASONS

"Easy to edit colour" and "easy to edit layout" are the same reason. They earned one mark in 2026.

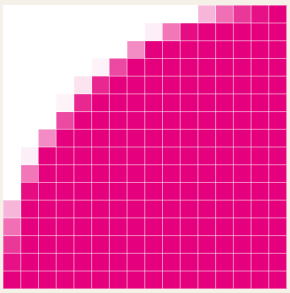
ANNOTATION

Notes on planning work that explain and justify decisions: colours, sizes, file types, E&P. In the project, annotated preliminary graphics are where much of the planning credit comes from.

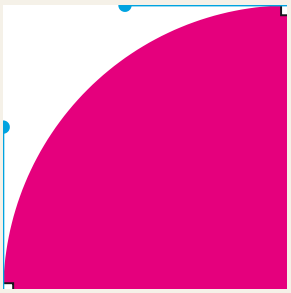
3.3

Raster & vector graphics

Every DTP document mixes two kinds of graphic. Choosing the right one for each job is a core AH skill, and examiners expect **specific** reasons, not "vector is better".



RASTER @ 800%: PIXELS



VECTOR @ 800%: NODES + PATH



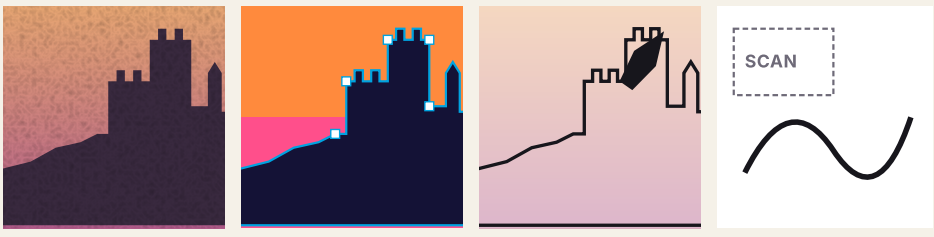
ZOOM AREA

Raster = grid of pixels
Vector = maths: points, lines, curves + fills

FIG 3.4 · The same edge enlarged eight times. Raster pixels become visible; the vector path stays perfectly smooth.

	RASTER (BITMAP)	VECTOR
Made of	A grid of coloured pixels	Points, lines and curves defined mathematically, with fills and strokes
Scaling	Enlarging loses quality (pixelation, blur). Resolution-dependent.	Scales to any size with no loss. Resolution-independent.
Best for	Photographs, painted textures, subtle tones and gradients	Logos, icons, type, illustrations, CAD/CAM cutting paths
File size	Grows with pixel dimensions	Grows with complexity (number of points)
Editing	Pixel by pixel; filters and retouching	Move nodes, change colours, edit shapes cleanly
Typical types	.jpg .png .bmp (.tiff)	.svg .ai .eps (.dxf .dwg)

Converting raster to vector



1 · RASTER PHOTO
2 · AUTO-TRACE
3 · PEN TOOL OVER
4 · TRACE + SCAN

FIG 3.5 · Three routes from a photograph to a vector.

1. **Auto-trace** (Image Trace, Power Trace): software detects edges and colour areas and builds paths automatically. Fast; settings control the number of colours, detail and smoothing.
2. **Pen / curve tools over the image**: draw paths by hand on a locked layer above the photograph. Slower, but every curve is controlled and the result is clean.
3. **Trace by hand and scan**: draw a line drawing, scan it and convert it to vector for editing.

PHOTO TO SOLID FILL (2023)

Use a high-resolution photograph → remove the background around the subject → fill the subject with one solid colour → convert or trace to a vector (or save as a PNG with transparency).

Why some effects are hard in vector



Gradients and soft drop shadows are pixel-based effects. Recreating them with vectors needs many shapes or meshes, and can band.

The MI (2024) credited: gradient fills and drop shadows are **controlled by pixels**, so they are complex to reproduce accurately as vector shapes.

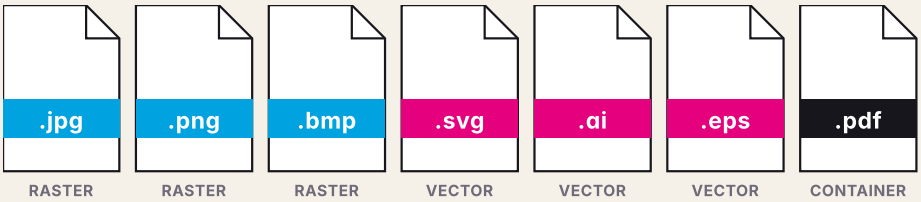
GENERIC ANSWERS

"Vector files are smaller" was a common weak answer in 2025. A detailed vector can be larger than a JPEG. Give the advantage that fits the **context**.

3.4

DTP file types

The course specification names six DTP file types plus the PDF. Learn what makes each one **different**: the course reports criticise answers that could apply to any file type.



Raster types in cyan, vector types in magenta. A PDF can contain both.

TYPE	KEY FEATURES	ADVANTAGES	LIMITATIONS
.jpg	Raster · **lossy** compression with adjustable quality · millions of colours · no transparency	Small files for photographs, so web pages load quickly; opens on almost any device	Detail is lost each time it is re-saved; blurry artefacts on sharp edges and text
.png	Raster · **lossless** compression · supports **transparency** (alpha channel) · RGB or greyscale, no CMYK	Crisp logos, icons and screenshots with clear backgrounds that sit over any colour	Larger than JPEG for photos; no CMYK, so not a print-production format
.bmp	Raster · usually **uncompressed** · native to Windows	Simple, no compression loss, very widely readable	Very large files; not suitable for web; rarely used in modern DTP
.svg	Vector · open web standard written as text code · scalable	Sharp at any size on any screen; tiny files for icons and logos; can be animated with code; readable by vinyl cutters and laser software	RGB colour; complex artwork makes large, slow files; not a print-ready format
.ai	Vector · Adobe Illustrator's native format · layers, artboards, editable type and effects	The master file for a logo: everything stays fully editable; can be saved out as other vector types or PDF	Proprietary: full editing needs Illustrator or compatible software
.eps	Vector (can hold raster) · PostScript-based exchange format · supports CMYK and spot colours	Long-established format accepted by printers and sign makers	No live transparency; being replaced by PDF; needs software to preview

HOW A FILE-TYPE ANSWER EARNS MARKS

Give a feature **specific to that file type**, then its effect in **this** context.

CAUSE JPEG compression reduces file size

EFFECT so the bike web page loads more quickly

ACCEPTED IN PAST MIS

.ai: easy to edit, scales without loss, embeds colour and type, can be saved as other vector types or PDF.
.png: transparency; compatible with nearly all graphics software.
.jpg: compression for fast loading; subtle colour changes in photos.

COURSE REPORT 2025

"Answers at this level should be specific to a particular file type rather than the generic advantages."

3.5

The role of PDFs in graphic communication

The Portable Document Format is the standard way to **hand over** a finished graphic, whether it goes to a printer, a client or the public. It can contain vector graphics, raster images and live text in one file.

PRINT PRODUCTION

PDF/X standards lock fonts, images and colour into one predictable file that any print company can output. PDF/X-1a: CMYK and spot only, transparency flattened. PDF/X-4: keeps live transparency and colour management.

PROOFING AND APPROVAL

Clients and printers mark up PDFs with comments and approve proofs without needing the design software.

UNIVERSAL VIEWING

A PDF looks the same on any device or operating system, with free readers everywhere.

FONTS AND IMAGES INCLUDED

Fonts are embedded (or subset), so the layout cannot reflow or substitute fonts.

INTERACTIVE DOCUMENTS

Hyperlinks, buttons, form fields, embedded video and navigation bookmarks for digital brochures.

ACCESSIBILITY

Tagged PDFs carry reading order and alt text, so screen-reader users can access them.

SECURITY AND DRM

Passwords, permissions (no printing, no copying), watermarks and digital signatures protect content (Chapter 8).

SMALL AND ARCHIVABLE

Compression keeps files small for email and download; PDF/A is a standard for long-term archiving.

Print-ready PDF checklist (GLOAMIN' programme)

- Exported as PDF/X with 3 mm bleed
- Crop and registration marks on
- All images 300 ppi at final size, in CMYK
- Fonts embedded or converted to outlines
- Spot colour named exactly as the swatch
- Proof checked and signed off by the client

PDF/X

A family of ISO standards for print-ready PDFs. A PDF/X file has to meet set rules (fonts embedded, colour defined, boxes for trim and bleed), so fewer errors reach the press.

ACCEPTED ANSWERS

Past MIs credited PDFs because they are easily opened, have small file sizes for storing and downloading, and keep a bank of resources available offline.

PDF IS NOT A MAGIC FIX

A PDF made from low-resolution RGB images is still low-resolution and RGB. Pre-press checks still matter (Chapter 4).

QUICK CHECK

Desktop publishing

1 Explain **two** reasons why a designer would use paragraph styles in a 16-page programme. 2

2 Describe the difference between a **thumbnail** and a **visual**. 2

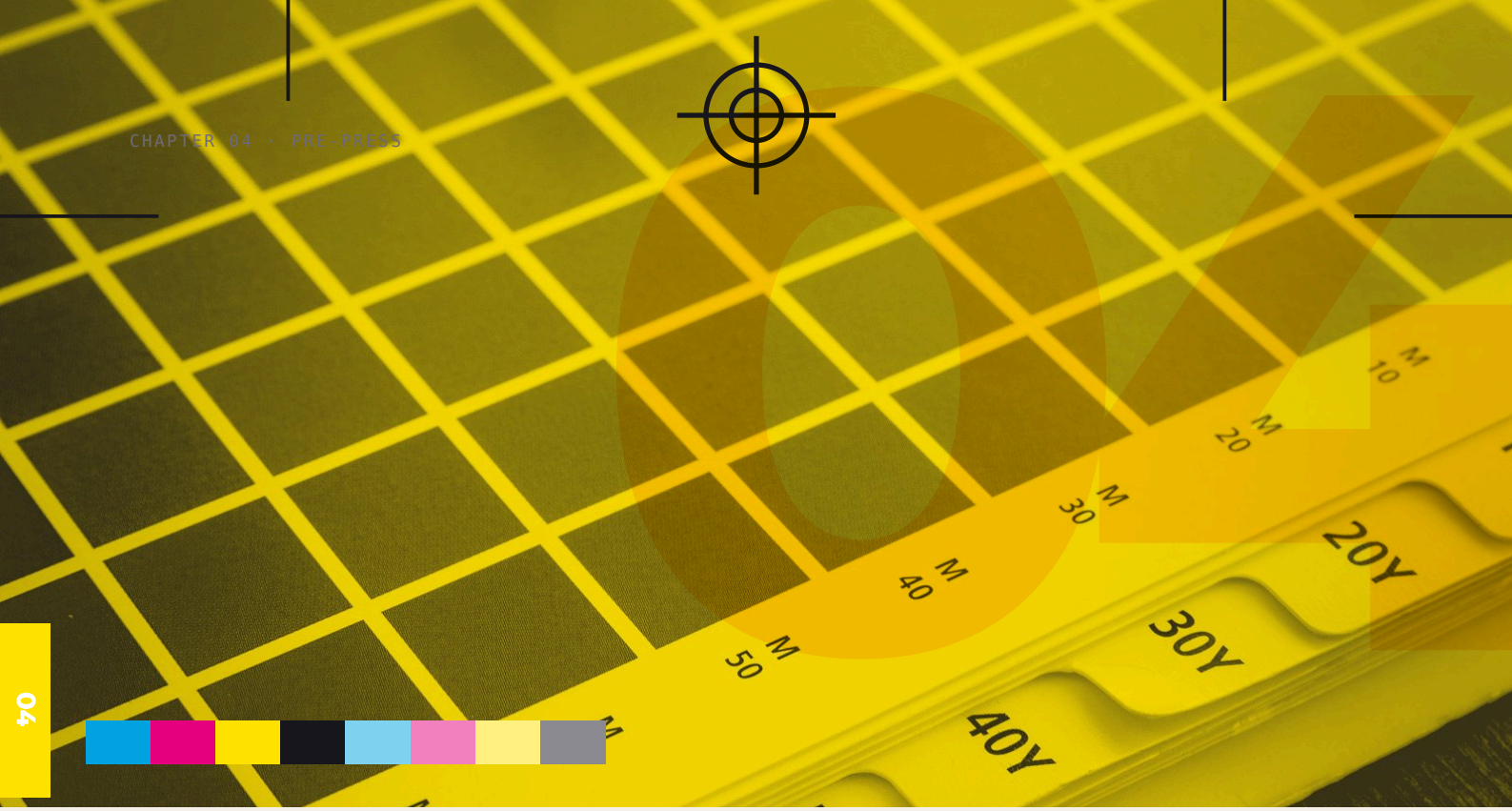
3 Explain why the GLOAMIN' logo master file should be a vector file rather than a raster file. 2

4 Describe **two** ways a raster photograph of the castle could be converted into a vector graphic. 2

5 A web designer must choose between .jpg and .png for a logo that sits over a photo. Recommend one and explain why. 2

6 Explain why gradients and soft drop shadows can be difficult to reproduce as vector graphics. 2

7 State **two** roles of PDFs in sending a programme to a commercial printer. 2



04

Pre-press

Everything that happens between “design finished” and “press running”. Pre-press checks catch the errors that would otherwise be printed thousands of times, so they protect quality, money and the client’s brand.

4.1	The pre-press workflow
4.2	Colour space: RGB, CMYK & conversion
4.3	Pantone Matching System
4.4	Resolution: DPI & PPI
4.5	Bleed, crop & registration marks
4.6	Checking artwork & fonts, text to vector
4.7	Pre-press in Affinity

4.1

The pre-press workflow

Pre-press turns a designer's file into something a press can print **correctly, the first time**. A mistake found on screen costs minutes. Found after printing 10 000 programmes, it costs the whole run.

01	02	03	04	05	06	07
Design	**Preflight**	**Proof**	**Approve**	**Output**	**Plates / RIP**	**Print + finish**
Artwork built at final size with bleed	Automatic + manual checks	Soft (screen) and hard (printed) proof	Client signs off the proof	Print-ready PDF/X with marks	Imposition, plates or digital RIP	Press, trim, fold, bind

The quality and standard checks you must know

The course specification lists the checks below. Each has its own section in this chapter.

CHECK	WHAT IS CHECKED	SECTION
Colour space	CMYK for print, with conversion checked; spot colours named correctly	4.2–4.3
Resolution	Every image 300 ppi at its printed size	4.4
Bleed	Artwork extends 3 mm beyond the trim wherever it touches the edge	4.5
Crop marks	Show where the sheet is trimmed	4.5
Registration marks	Let the printer align every colour plate	4.5
Artwork and fonts	Text proofread; fonts embedded, licensed or outlined	4.6
Text to vector	Type converted to outlines where needed	4.6

Proofs

SOFT PROOF
On-screen preview that simulates the final paper and inks using a colour profile. Quick and free, but only as accurate as a calibrated monitor.

HARD / CONTRACT PROOF
A printed proof on a calibrated proofing printer. The client signs it as the agreed colour target.

PRESS PROOF
Printed on the actual press and paper: the most accurate, and the most expensive.

PRINT TECHNICIAN
Prepares files and presses. Needs print-ready files: CMYK, bleed, marks, fonts embedded or outlined, 300 ppi images, and a clear specification of paper, quantity and finish.

PREFLIGHT
Checking a file for errors before output. DTP software flags missing fonts, low-resolution or RGB images, overset text and missing bleed.

WHY EXAMINERS LOVE PRE-PRESS
Questions about pre-press appear every year. The 2023 report found many answers **not explained to an AH standard**: say what the check is **and** what goes wrong without it.

EXPLAIN = WHAT + CONSEQUENCE
Crop marks are needed because they show the guillotine operator exactly where to trim, so every business card comes out the same correct size.

4.2

Colour space: RGB, CMYK & conversion

Screens make colour with **light**; presses make colour with **ink**. The two systems cannot reproduce exactly the same range of colours, and that causes most colour complaints.

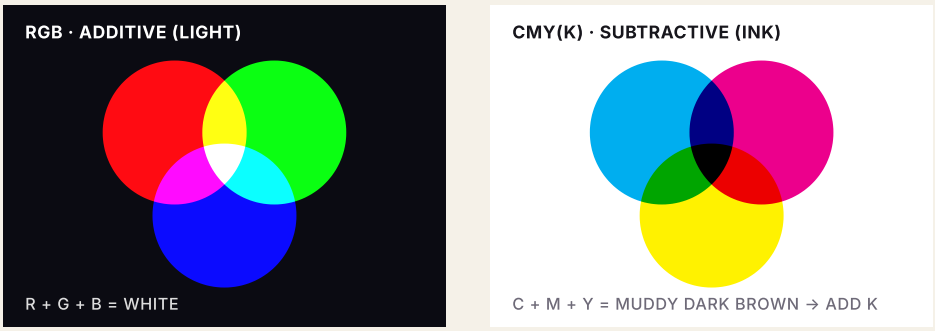


FIG 4.1 · Additive RGB mixes light towards white. Subtractive CMY inks absorb light towards a dark, muddy brown, so a separate black (K, "key") is added for clean, crisp blacks and text.

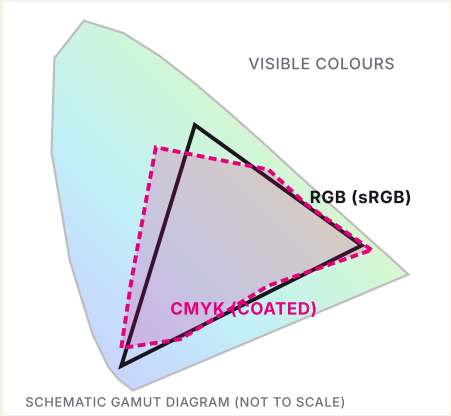
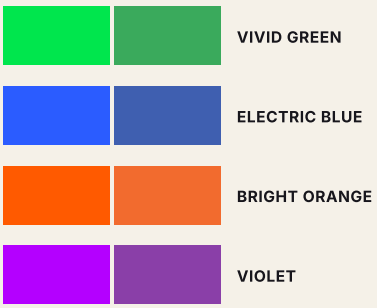


FIG 4.2 · Gamut: the range of colours a device or process can reproduce.

Conversion issues

- **Out-of-gamut colours.** Bright, saturated RGB greens, blues, oranges and violets have no CMYK match. On conversion they become **duller**.
- **Different paper, different result.** Uncoated paper absorbs ink and prints duller than coated paper, so conversions use a profile for the paper (e.g. *Coated FOGRA39* in Europe).
- **Convert once, check on screen.** Converting back and forth loses colour information. Soft-proof before converting.
- **Black text = 100 K only.** Four-colour black text blurs if the plates misregister.
- **Ink limit.** Too much total ink (e.g. over about 300%) smudges, sets off and dries slowly.



RGB ON SCREEN → TYPICAL CMYK PRINT (APPROX.)

Typical shifts when vivid RGB colours print in CMYK. Approximate: your screen can't show the true print result.

RGB

Red, green, blue light. Used by monitors, phones, projectors and digital displays. Web and app graphics stay in RGB.

CMYK

Cyan, magenta, yellow and key (black) inks. Used for full-colour (four-colour process) printing.

ACCEPTED MI ANSWERS (2026)

CMYK for physical use; **RGB** for electronic use; **Pantone** to keep colours consistent across both.

COURSE REPORT 2024

Most candidates defined the terms but gave **no values**, and many referred to printed versions. For an app, state **RGB** and a screen resolution (e.g. 72 ppi or more) and give the effect. (The MI did accept 300 dpi/CMYK where candidates explained the backgrounds would also be printed.)

4.3

Pantone Matching System (PMS)

The **Pantone Matching System** is a standardised library of numbered **spot colours**. Each one is mixed from base inks to a published formula, so "PANTONE 806 C" is the same pink whether it is printed in Aberdeen or Amsterdam, this year or next.



SPOT COLOUR GUIDE
C = coated · U = uncoated

FIG 4.3 · A Pantone guide shows each spot colour printed on real paper. Brand guidelines name the exact reference.

Why designers specify Pantone colours

- **Consistency.** A brand colour matches across printers, materials and print runs.
- **Colours outside CMYK.** Fluorescents, metallics (gold, silver) and some vivid oranges and blues are only possible as spot inks.
- **Exact communication.** Designer, client and printer all refer to the same number instead of "a warm pink".
- **Fewer inks for simple jobs.** A two-colour job (e.g. black + one Pantone) can cost less than four-colour process.
- **Across media.** Pantone publishes CMYK, RGB and HEX equivalents, so on-screen versions get as close as possible.

Spot vs process colour

	PROCESS (CMYK)	SPOT (PANTONE)
How it's made	Tiny dots of four inks that the eye mixes	One pre-mixed ink printed solid
Best for	Photographs and full-colour images	Logos, brand colours, solid areas, metallics
Accuracy	Varies with press, paper and ink density	Highly consistent
Cost	Four plates whatever the design	An extra plate and wash-up for each spot colour

The GLOAMIN' brand specifies a fluorescent pink spot (PANTONE 806 C) for the dates on printed items. No CMYK mix can reach that brightness, so the flyers print as **CMYK + 1 spot** (five plates).

C AND U SUFFIXES
C = coated paper, **U** = uncoated paper. The same ink looks different on each, so guides show both.

ACCEPTED MI ANSWERS
Pantone ensures colour consistency between the DTP design and the printed item (2022); between digital and printed media (2025); across different printing methods and substrates (specimen).

SCREEN ≠ SWATCH
Colours on this page and on any screen are only approximations. Designers check spot colours against a printed Pantone guide.

04

4.4

Resolution: DPI & PPI

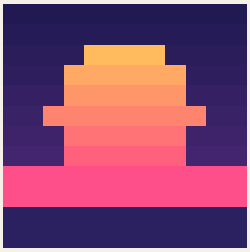
Resolution is the amount of detail an image holds. For print, the key question is always: **how many pixels will there be per inch once the image is printed at its final size?**

PPI · PIXELS PER INCH

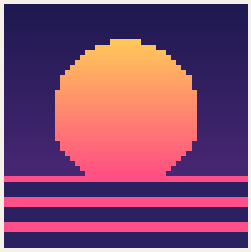
The density of **pixels** in a digital image or on a screen. It describes digital images and displays.

DPI · DOTS PER INCH

The density of **ink dots** a printer lays down. It describes printed output. In everyday use the terms are often swapped, but at AH you should keep them distinct.



72 PPI IMAGE PRINTED AT 50 mm
= 142 px: BLOCKY, SOFT EDGES



300 PPI IMAGE PRINTED AT 50 mm
= 591 px: SHARP DETAIL

PIXELS NEEDED

px = (mm ÷ 25.4) × ppi

A5 + 3 mm bleed:
154 × 216 mm @ 300 ppi
= 1819 × 2551 px

Web banner 1200 px wide
printed 300 ppi → 101.6 mm

FIG 4.4 · The same 50 mm print from a 72 ppi image and a 300 ppi image.

The numbers to know

USE	RESOLUTION	WHY
Printed media (flyers, programmes)	**300 dpi/ppi** at final size	At reading distance the eye cannot see individual dots, so edges look sharp and photos look continuous.
Screens (web, apps)	**72 ppi** is the traditional figure	Images are sized in pixels for the screen; extra pixels only add file size and loading time.
Wide-format (banners, billboards)	Often **100–150 ppi** or lower	Viewed from metres away, so lower resolution looks sharp and keeps huge files manageable.

TOO LOW

CAUSE Not enough pixels for the print size

EFFECT Pixelation, blurred edges, jagged type: the item looks unprofessional

TOO HIGH

CAUSE Far more pixels than needed

EFFECT Huge files that slow transfer, loading and printing, with no visible gain

2026 MI

Credit was given for: **300 dpi or higher** for physical use; **72 ppi or higher** for electronic use; too low a resolution affects image quality; too high slows down transfer and loading. These answers had to show **cause and effect**.

SCALING UP DOESN'T ADD DETAIL

Enlarging a 72 ppi web image to print size spreads the same pixels further apart. Software can resample, but it invents pixels, so the image goes soft.

EFFECTIVE RESOLUTION

The ppi of an image **at the size it is placed**. A 300 ppi photo enlarged to 200% has an effective resolution of 150 ppi.

PHOTO REDUCTION

Reducing an image's size **increases** its effective resolution, so detail looks sharper. Artwork is often prepared larger than needed and reduced.

4.5

Bleed, crop & registration marks

A print-ready page carries **printer's marks** outside the finished size. They are trimmed away, but without them nobody can align, check or cut the job accurately.

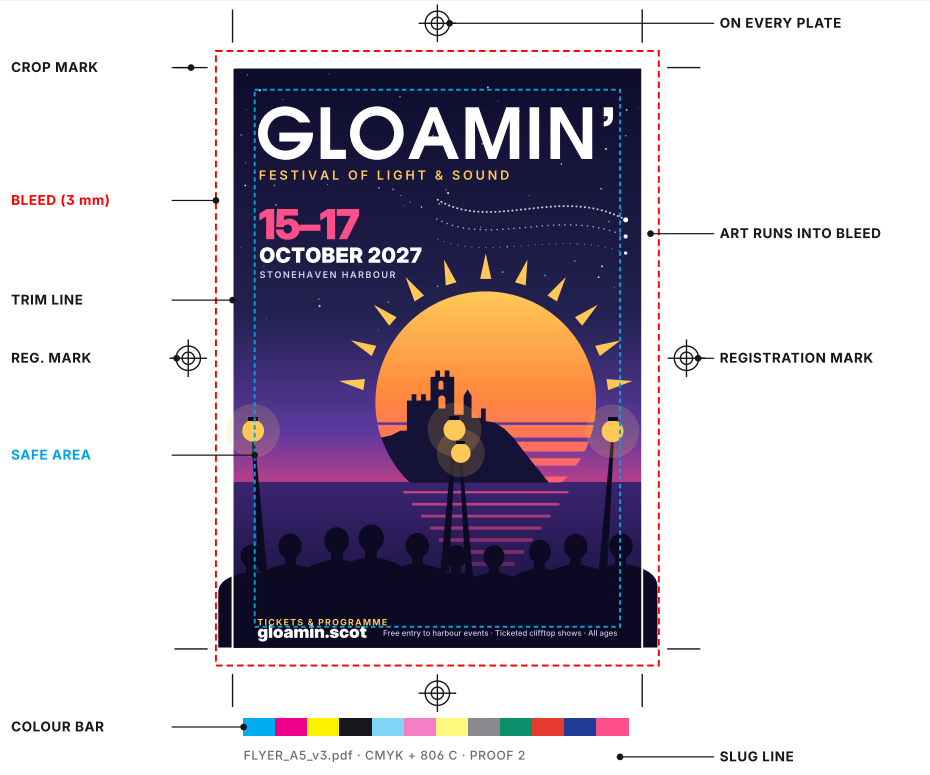


FIG 4.5 · The GLOAMIN' A5 flyer as a print-ready page with full pre-press furniture.

BLEED

Artwork extended past the trim line, usually **3 mm**. The guillotine can drift slightly, so bleed prevents thin white slivers at the edge and gives true **edge-to-edge** colour.

CROP (TRIM) MARKS

Thin lines **outside the bleed** showing where to cut. They sit outside so they never print onto the finished item.

REGISTRATION MARKS

Targets printed on **every colour plate**. When the plates align they print as one crisp black mark; coloured fringes show the press is out of register.

SAFE AREA

A margin inside the trim (about 3–5 mm) where all important text and logos must sit, so nothing is lost if the cut drifts.

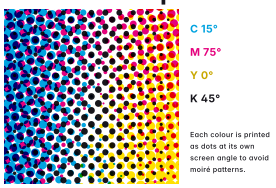
COLOUR BAR

Solid and tint patches of each ink. The printer measures them with a **densitometer** to check ink density stays consistent through the run.

SLUG

Area outside the bleed for job information: file name, date, version, inks.

Under the loupe



Enlarged CMYK halftone: four screens of dots at different angles.

4.6

Checking artwork & fonts · text to vector

The last checks before files leave the studio. Use them as a **preflight checklist** for your own project.

CHECK	WHAT TO LOOK FOR
☐ **Text**	Proofread every word, date, time, price, phone number and web address. Spell-check, then read it aloud.
☐ **Placeholder**	No lorem ipsum, "insert image" boxes or template text left behind.
☐ **Fonts**	All fonts available to the printer: embedded in the PDF or converted to outlines. Fonts properly licensed.
☐ **Images**	Linked files present; 300 ppi effective resolution; CMYK (or managed); no low-res web grabs.
☐ **Colours**	Spot colours named exactly as in the brand guidelines; no unwanted RGB; black text 100 K.
☐ **Geometry**	Correct trim size and orientation; bleed on all edges that need it; text inside the safe area.
☐ **Lines and overprint**	Hairlines not thinner than about 0.25 pt; overprint and knockout set deliberately.
☐ **Output**	PDF/X with marks; page order and imposition checked; client has approved the final proof.

Text to vector (convert to outlines / curves)



FIG 4.6 · Live text needs the font file installed. Outlined text is a set of vector shapes.

Why convert

- The printer doesn't need the font, so there is no **substitution** or missing-font error.
- Type looks the same in **any software** that opens the file.
- Type scales cleanly as part of a logo, and can be **vinyl-cut or laser-cut** as paths.
- Avoids sending font files the licence may not let you share.

Drawbacks

- Text can no longer be **edited or spell-checked**, so proofread first and keep an editable master.
- Large amounts of outlined body text make files heavier.
- Screen readers can't read outlined text in digital PDFs.

Camera-ready copy

Final artwork that is **complete and needs no further changes** before reproduction. The term comes from the days when finished paste-up artwork was photographed by a process camera to make printing plates. Today the camera-ready copy is the approved print-ready PDF.

2026 MI: TEXT TO VECTOR

Accepted reasons: text can be scaled without distortion; text transfers across different software; little or no typeface specification is needed because the text is now an image format.

FONT SUBSTITUTION

When a file is opened on a computer without the font, the software swaps in another, so the line breaks, spacing and look change.

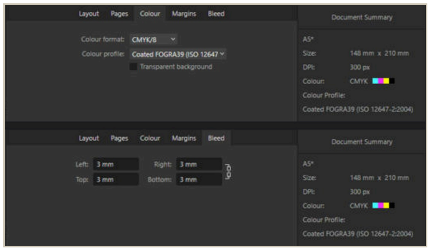
CONVERT LAST

Once text is outlined, a spelling mistake has to be redrawn. Always proofread before converting.

4.7

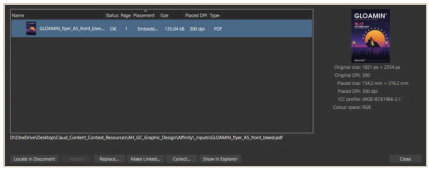
Pre-press in Affinity

The same checks in real software, shown in Affinity Publisher 2 with the GLOAMIN' flyer. InDesign and other DTP packages have equivalent commands.



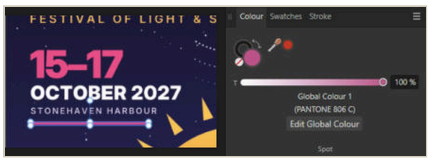
STEP 1 **New document with bleed**

File › New. Choose A5 (148 × 210 mm) at 300 DPI. On the **Colour** tab set CMYK/8 and the printer's profile (here Coated FOGRA39). On the **Bleed** tab enter 3 mm on every side.



STEP 2 **Check placed images**

Window › Resource Manager lists every placed file with its status, whether it is **linked or embedded**, its **Placed DPI** and colour space. Here the flyer artwork is 300 dpi but still **RGB**, so it must be converted.



STEP 3 **Apply the spot colour**

Swatches panel: open a PANTONE palette (806 C is in PANTONE+ Pastels & Neons Coated) and apply it. The Colour panel confirms it is a **spot** colour, not CMYK.



STEP 4 **Preflight**

Window › Preflight, with Check set to **Live**. It lists problems as you work, such as the placed PDF version here, as well as low-resolution images, overflowing text, missing fonts and spelling.



STEP 5 **Convert type to curves**

Select the text and choose Layer › Convert to Curves. Each letter becomes a curve, so the printer doesn't need the font, but the text can no longer be edited. Keep an editable copy.



STEP 6 **Export the print PDF**

File › Export, choose PDF and a **PDF/X** preset. Here the printer asked for **PDF/X-1a:2003** (CMYK, 300 dpi, spot colours honoured, transparency flattened); use PDF/X-4 if your printer accepts it. Tick "Include bleed" and "Include printers marks": crop, registration, colour bars and page information.

PRACTISE

Open **GLOAMIN_Flyer_A5_print.afpub** from the GLOAMIN' asset pack and repeat these six steps. Then try exporting with the PDF/X-4 preset and compare.

PLACED DPI

The resolution of an image at the size it is placed on the page. Enlarging an image lowers its placed DPI. Aim for 300 dpi in print.

PDF/X-1A VS PDF/X-4

X-1a flattens transparency and allows only CMYK and spot colours. X-4 keeps live transparency and is the modern default for most printers. Always ask the printer which they want.

NOT JUST THE PDF

Exporting a PDF/X doesn't fix RGB images or low resolution automatically. The preflight checks still matter.

QUICK CHECK

Pre-press

1 Explain why the GLOAMIN' flyer artwork must be converted from RGB to CMYK, and describe one problem that may occur. 2

2 Explain **two** reasons why the festival specifies a Pantone colour for its pink. 2

3 A photo is 1200 × 800 pixels. Calculate its largest print width in mm at 300 ppi (1 inch = 25.4 mm). 1

4 Explain the purpose of bleed **and** crop marks on a flyer that has a photograph running to the edge. 2

5 Describe how registration marks are used during four-colour printing. 2

6 Describe **two** advantages and **one** disadvantage of converting text to vector before sending artwork to a printer. 3

7 Explain what is meant by camera-ready copy. 1



Printing technologies

Six printing technologies, each with a job it does best. You need to know the **role** of each, how it is **set up**, and how to **justify a choice** from a specification: quantity, size, substrate, colours and budget.

5.1 Choosing a technology
5.2 Laser printing
5.3 Ink-jet printing
5.4 Solid ink systems
5.5 Wide-format printing
5.6 Screen printing
5.7 Offset lithography
5.8 Printing terminology

5.1

Choosing a printing technology

In the exam you will be given a context or a **print specification** and asked to explain why a technology is (or isn't) suitable. The reasons must come **from the specification**, not from a list learned by heart.

The deciding factors

FACTOR	HOW IT AFFECTS THE CHOICE
Quantity (run length)	Set-up costs (plates, screens) are spread across the run. Long runs favour offset litho; short runs favour digital (laser, inkjet).
Size	Laser and desktop inkjet stop at about SRA3. Long runs of large posters (A2–A1) can be litho; one-offs and very large items (banners, pull-ups, wraps) suit wide-format.
Substrate	Fabric and rigid or curved items favour screen printing; vinyl and banner material favour wide-format; textured paper is fine on litho.
Colours	Few flat colours suit screen printing or spot-colour litho. Photographs need CMYK process.
Quality and consistency	Litho gives the most consistent colour over thousands of copies.
Time and cost	Digital needs no plates, so it's fast to start; litho is cheapest per copy once running.

Quick chooser

Short run, office documents, text — LASER

Proofs, photos, short colour runs — INKJET

Vivid colour on varied media, low waste — SOLID INK

Large size: banners, signs, wraps — WIDE-FORMAT

Textiles, bags, bold flat colours — SCREEN PRINTING

Long runs: thousands of copies — OFFSET LITHO

EXAMPLE SPECIFICATION · GLOAMIN' programme
Format: A5 portrait, 16 pages, self-cover · Quantity: 20 000 · Stock: 150 gsm silk throughout · Colours: CMYK + PANTONE 806 C · Bleed: 3 mm · Finish: saddle-stitched
→ **Offset lithography:** large quantity, spot colour, consistent quality, a range of paper weights.

DON'T REWORD THE QUESTION

The 2023 MI warned: *"Do not accept a rewording of the question."* Explain the choice **with reference to the specification**: quantity, size, substrate, colours.

COURSE REPORT 2026

Most candidates did not describe offset lithography itself, writing about print-ready copy instead. Learn the **process** as well as the checks.

RUN LENGTH

The number of copies printed in one job. It is the single biggest factor in choosing between digital and offset printing.

DIGITAL PRINTING

Printing straight from a file with no plates: laser and inkjet. Every copy can be different (variable data), e.g. numbered tickets.

5.2

Laser printing

The rotating drum is given an even electrical charge; a **laser** discharges the image areas. Charged powder **toner** sticks to those areas, transfers to the paper and is **fused** on with heat and pressure.

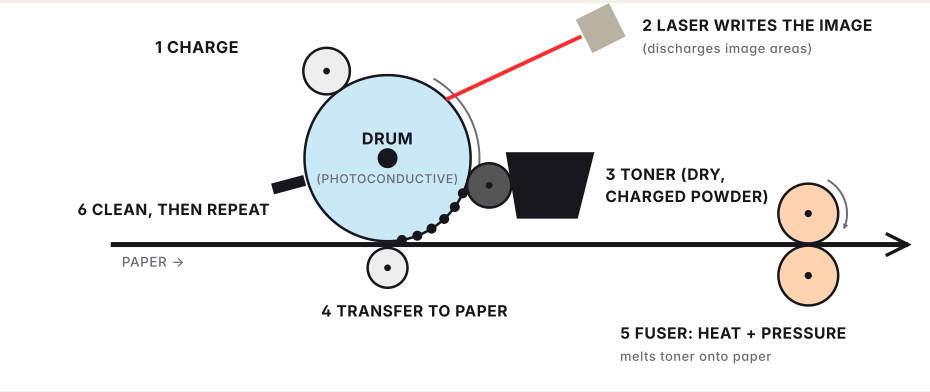


FIG 5.1 · The six stages of laser printing.

Role: what it's used for

- Office documents, letters, reports
- Short runs of flyers, leaflets, tickets
- Print-on-demand and variable data (names, numbers)
- Crisp text and line work

Set-up requirements

1. Choose paper size and **weight** within the printer's range; set the tray and driver to match
2. Set colour mode, resolution (e.g. 600–1200 dpi) and duplex options
3. Check toner levels; run calibration so colours stay consistent
4. Allow the fuser to warm up

Advantages

- Fast; no plates, so quick to start
- Sharp text; toner doesn't smudge
- Same cost per page whatever the run, so ideal for short runs
- Reliable duplexing

Limitations

- Cost per copy too high for long runs
- Fuser heat limits some media (certain plastics, very heavy card)
- Colour less consistent than litho over long runs
- Limited sheet sizes

TONER

Fine, dry, electrically charged powder (pigment and plastic). It is melted onto the paper, not absorbed into it.

LINK TO FINISHING

Toner sits on the surface, so laser prints on glossy, calendered paper look sharp, but folding can crack heavy toner.

5.3

Ink-jet printing

An **ink-jet** printhead moves across the paper firing microscopic droplets of liquid ink from rows of nozzles. Droplets are fired either by heat (thermal) or by a piezo crystal that flexes.

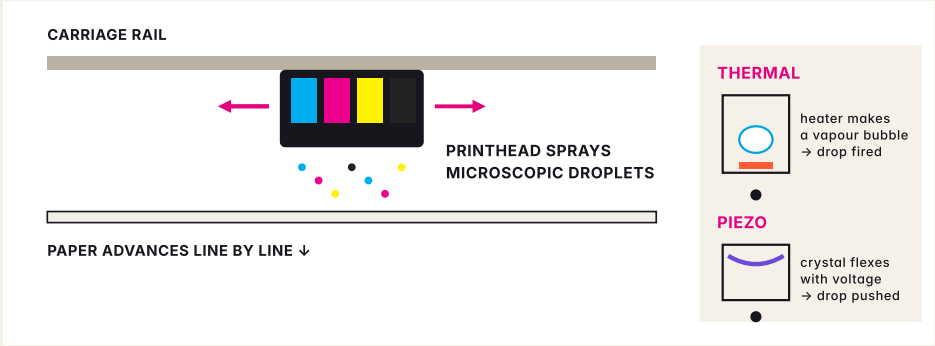


FIG 5.2 · Ink-jet printhead and the two ways droplets are fired.

Role: what it's used for

- Proofs before a full print run
- Photographic prints and fine art (giclée)
- Short runs of posters and flyers
- Home and office colour printing

Set-up requirements

1. Choose the correct **paper type setting** (gloss, matt, photo): it controls how much ink is laid down
2. Set print quality and resolution
3. Apply colour management (ICC profile) to match the proof to the final process
4. Run a nozzle check, head alignment and cleaning
5. Select borderless for edge-to-edge prints; allow drying time

Advantages

- Excellent photographic detail and smooth tones
- Low equipment cost; no plates
- Prints on a wide range of papers and films
- Good for proofs and very short runs

Limitations

- Ink is expensive; high cost per copy
- Slower than laser for volume
- Water-based inks can smudge or run; drying time needed
- Colours differ from litho, so a casual inkjet print isn't a reliable proof

2023 MI: THE SCREENSHOT PROOF

An inkjet print of a **screenshot** on glossy paper, posted to the client, had limited value because: the screenshot lacks the required resolution; the calendered gloss paper differs from the real stock; and the inkjet can't reproduce litho colours.

CONTRACT PROOF

An inkjet proof made on a calibrated, colour-managed proofer. It predicts the press result closely enough for the client to sign it off.

5.4

Solid ink systems

Solid ink printers use sticks of resin-based ink that are solid at room temperature. They are melted, jetted onto a heated drum, then transferred and fused onto the paper, where they set almost instantly.

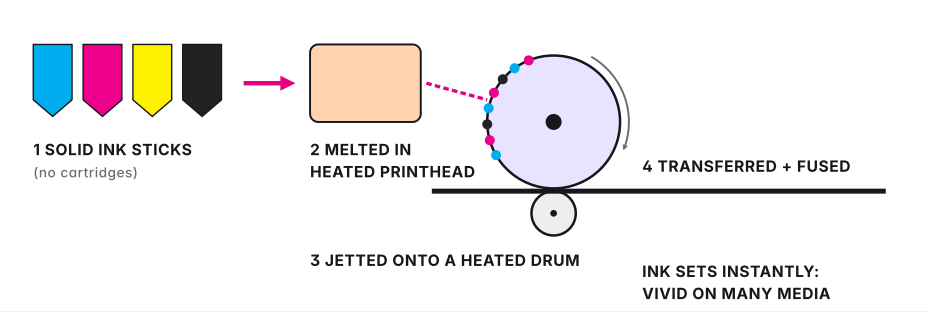


FIG 5.3 · Solid ink: sticks are melted, jetted onto a drum, then transferred to the paper.

Role: what it's used for

- Office and workgroup colour printing
- Flyers and documents needing vivid colour
- Printing on a wide range of paper types, including recycled

Set-up requirements

1. Load the correct colour sticks (each colour's stick is a different shape, so they can't be loaded wrongly)
2. Allow warm-up time for the ink to melt; machines are often kept on standby
3. Select paper type and size in the driver

Advantages

- Very little packaging waste: no cartridges to throw away
- Vivid, saturated colour that sits on the surface
- Consistent results on many paper types, including recycled
- Simple ink loading

Limitations

- Energy is used keeping the ink molten
- Waxy prints can scratch or crack when folded
- Warm-up time if switched off
- Now a niche technology

2024 MI: WHY SOLID INK IS BETTER FOR THE ENVIRONMENT

Ink is supplied **without additional packaging**; there are **no cartridges** to dispose of; the ink is made from **biodegradable natural** materials. The 2024 report noted a widespread lack of understanding of solid ink, so learn these points.

BALANCE YOUR ANSWER

An evaluation should also mention the energy needed to keep the ink molten.

5.5

Wide-format printing

Wide-format (large-format) printers are large ink-jet machines that print on rolls or sheets from about 60 cm up to 5 m wide, onto vinyl, banner PVC, fabric, canvas, paper or rigid board.

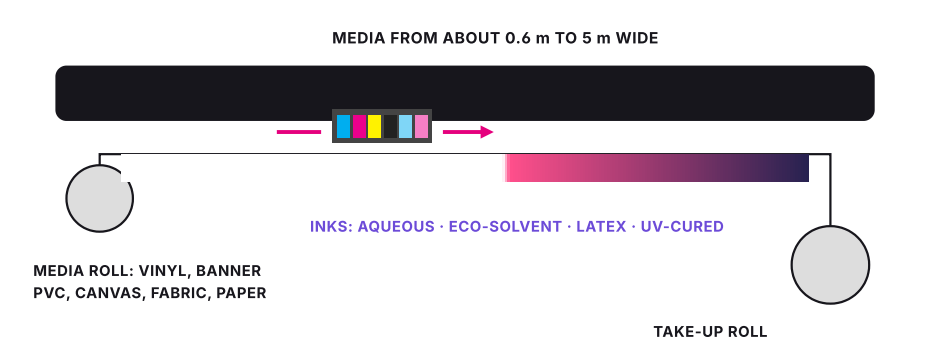


FIG 5.4 · Roll-fed wide-format printer.

Role: what it's used for

- Pull-up banners and exhibition stands
- Posters (A1 and larger), window graphics, signage
- Vehicle wraps, building wraps and billboards (in panels)
- Canvas prints and wallpaper

Set-up requirements

1. Load the media roll and select the matching **media profile**
2. Choose the ink system: eco-solvent, latex or UV for outdoor durability, aqueous for indoor
3. Process the file through **RIP** software; set the scale and tile very large jobs with an overlap
4. Set a resolution suited to viewing distance
5. Plan finishing: lamination, hemming, eyelets, mounting

Advantages

- Very large sizes in one piece
- A wide variety of substrates and inks
- High-quality images at viewing distance
- Affordable for low-volume runs: no plates

Limitations

- Expensive equipment and media
- Slow for large quantities
- Huge file sizes need careful preparation
- Some inks (solvents) need ventilation and give off VOCs

2021 MI: WHY WIDE-FORMAT SUITS A PULL-UP DISPLAY

Suitable for **large-format** printing; suits a **wide variety of substrates**; produces **high-quality images**; is **affordable for low-volume** runs.

RIP

Raster Image Processor: software that converts the artwork into the dot pattern the printer lays down, and manages colour, scaling and tiling.

QUALITY CHECKS ON A TEST PRINT

Colour correct on the new substrate (calibration), crisp edges on text and images, and correct contrast and saturation.

5.6

Screen printing

Ink is pushed by a **squeegee** through a fine mesh stretched on a frame. A **stencil** blocks the mesh everywhere except the image, so ink only reaches the substrate where it's wanted. Each colour needs its own screen.

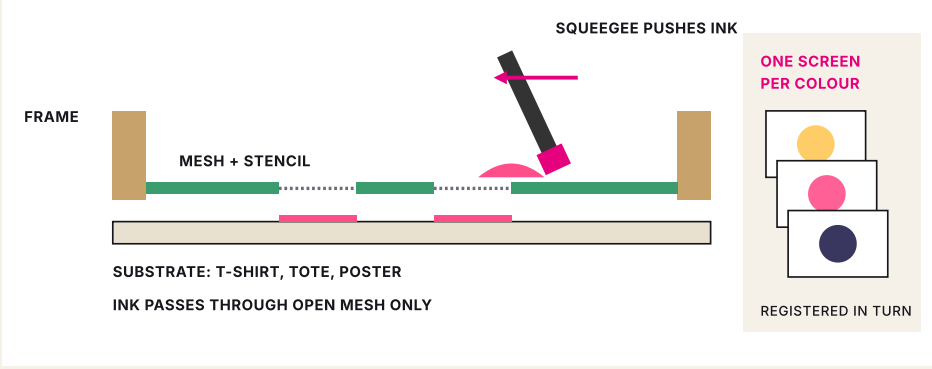


FIG 5.5 · Screen printing in section, with one screen per colour.

2025 MI: CANVAS BAG

Suitable because: a simple design with few block colours; ink adheres to and penetrates the canvas, so it's durable and survives washing; vibrant colours; layered colours apply well.

CONTEXT DECIDES

In 2022 screen printing was **unsuitable** for customised cycle jerseys: customers' gradients and photos, specialist stretch fabric, one colour at a time. The 2025 report: *"scalability is not a principal reason."*

Role: what it's used for

- T-shirts, tote bags and textiles
- Posters and art prints with bold flat colours
- Signage, packaging, ceramics, glass and merchandise

Set-up requirements

1. **Separate** the artwork into one solid colour per screen; print each on a transparent film positive
2. Coat the screen with light-sensitive emulsion; expose it to UV through the film; wash out to form the stencil
3. Choose the mesh count to suit the detail and ink
4. **Register** the screens using marks and hinges or pallets
5. Test print, then cure the ink (heat for plastisol)

Advantages

- Thick, opaque, vibrant ink that suits dark fabrics
- Very durable: ink grips or penetrates the substrate
- Prints on almost any surface, flat or curved
- Economical for medium to large runs of simple designs

Limitations

- Set-up for every colour, so poor for very short runs
- Gradients and photographs are difficult (they need halftones)
- Many colours mean many screens and slow registration
- Not ideal for specialist stretch fabrics

5.7

Offset lithography

The workhorse of commercial print. Lithography is **planographic**: image and non-image areas are on the same flat plate. It works because **oil and water repel**: the plate is dampened, water clings to the non-image areas, and the oily ink sticks only to the image. The image is **offset** onto a rubber blanket and then onto the paper.

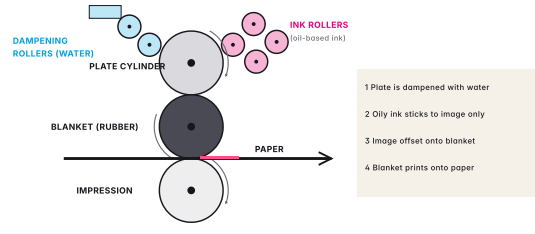


FIG 5.6 · One printing unit. A four-colour press has four units in a row: C, M, Y, K.



Sheets leaving an offset press. Photo: Pexels.

Role

- Long runs: magazines, books, brochures, programmes, catalogues
- Leaflets and flyers in large quantities
- Packaging and labels
- Jobs needing Pantone spot colours or special papers

Set-up requirements

1. **Impose** the pages onto the press sheet
2. Make one **plate per colour** (CMYK + spots), usually computer-to-plate
3. Mount the plates; set the **ink and water balance**
4. Use **registration marks** to align the colour units
5. Run make-ready sheets; check **colour bars with a densitometer**
6. Print, dry or varnish, then cut to the **crop marks**, fold and bind

Advantages

- Consistently high quality over very long runs
- Lowest cost per copy for large quantities
- Wide range of papers, including textured stocks
- Spot and metallic inks; custom sheet sizes

Limitations

- High set-up cost and time (plates, make-ready)
- Uneconomical for short runs
- Every copy identical: no variable data
- Waste sheets during make-ready

2023 MI: WHY LITHO FOR THE BOOK SLEEVE

Suitable for **large-scale production** (quantities over 10 000); prints on a **variety of substrates** such as textured paper; **consistently high-quality** images; can be set up for **non-standard sizes**; prints separate **CMYK** colours.

KNOW THE MI WORDING

The 2026 MI described plates holding the image "in relief", but lithography is **planographic** (flat). Teach and learn planographic: the MI also accepted correct descriptions in other words.

MAKE-READY

Setting up and adjusting the press before the real run, including registration and ink density checks.

SHEET-FED VS WEB-FED

Sheet-fed presses print on cut sheets; web-fed presses print on continuous reels for very long runs such as newspapers.

5.8

Printing terminology

The course specification lists eleven printing terms. Learn the **definition**, and be ready to explain **why it matters** for a given item.

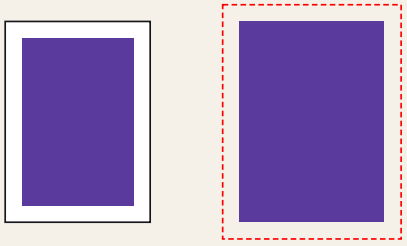


FIG 5.7 · Edge to edge needs bleed and trimming.

EDGE TO EDGE

Printing that runs right to the edges of the finished item with no white border. It's achieved by printing with **bleed** on an oversized sheet and trimming, or with a borderless printer setting.

BLEED

Artwork extended beyond the trim line (usually 3 mm) so that, when trimmed, colour runs to the edge with no white slivers.

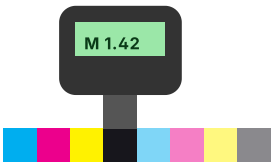


FIG 5.9 · Densitometer reading a colour bar.

DENSITOMETER

An instrument that measures the **optical density** of printed ink, usually on the colour bar. Readings show whether each ink is printing at the correct strength across the sheet and through the run.

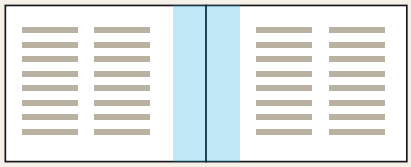


FIG 5.8 · The two meanings of gutter.

GUTTER

The space between **columns** of text, and the inner margins where facing pages meet at the **spine/fold**. Also the space between items imposed on one sheet, such as business cards.

COLOUR CALIBRATION

Adjusting monitors, printers and proofers to a known standard (with a colorimeter and ICC profiles) so that colours seen on screen, on the proof and on the press match as closely as possible.

PHOTO REDUCTION

Reducing the size of an image or artwork for reproduction. Originally done with a process camera; now done digitally. Reducing increases the effective resolution, giving sharper detail. Enlarging does the opposite.

TEST PRINT CHECKS (2026 MI ACCEPT)

Check a test print for correct **registration**, **colour calibration** and **densitometer** readings before the full run.

COURSE REPORT 2022

"Many candidates did not know what 'calendaring' or 'duplexing' was." Both are defined over the page.

5.8 continued

Paper and finishing terms

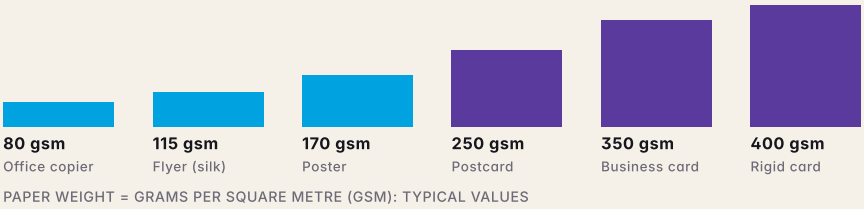


FIG 5.10 · Typical paper weights. Heavier stock feels more premium, but costs more to buy and post.

PAPER WEIGHT

Measured in **grams per square metre (gsm)**. It indicates thickness and stiffness. Heavy stock (300+ gsm) feels luxurious and durable and can take embossing. Lighter stock is cheaper, folds easily and costs less to post.

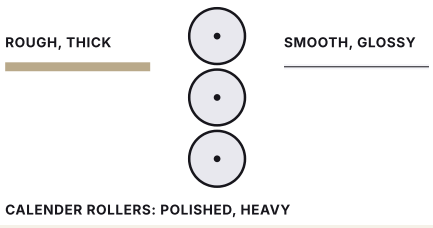


FIG 5.11 · Calendering compresses and polishes the paper surface.

CALENDERING (CALENDARING)

Passing paper between heavy, polished rollers (calenders) to compress and **smooth** its surface. It gives a smooth or **glossy** finish that holds fine detail and sharp images.



FIG 5.12 · Duplexing and opacity go together.

DUPLEXING

Printing on **both sides** of the sheet. Front and back must be **aligned** (backed up) so content and folds line up, e.g. a map on one side matching the information on the other.

PAPER OPACITY

How much light the paper blocks. High opacity stops print on one side **showing through** to the other, which matters for every duplexed item.

CAMERA-READY COPY

Final, approved artwork ready for reproduction with no further changes. Today it is the print-ready PDF.

2022 MI: LUXURY INVITATION

Pantone: consistent gold. **Calendering**: smooth finish where gloss is needed. **Duplexing**: accurate alignment of both sides. **Paper weight**: heavier stock feels luxurious and lets the embossing show.

2024 MI: BUSINESS CARD

Opacity: images on the back can't be seen through the front. **Crop marks**: every card is cut to the correct size.

WEIGHT ≠ OPACITY

The 2022 report: paper weight is distinct from opacity. Thick paper can still be translucent (e.g. tracing paper).

QUICK CHECK

Printing technologies

1 A specification asks for 25 000 A5 programmes on 130 gsm silk with a Pantone spot colour. Explain, with reference to the specification, why offset lithography is suitable. 3

2 Describe **three** set-up requirements for screen printing a two-colour logo onto tote bags. 3

3 Explain why wide-format printing would be chosen for a 2 m × 0.85 m pull-up banner. 2

4 Explain **two** reasons why a laser printer is suitable for printing 150 numbered volunteer passes. 2

5 Explain why paper opacity and duplexing are important for a double-sided festival map. 2

6 Describe the purpose of a densitometer. 1

7 Explain what calendering does to paper and why a designer might request it. 2



Environment & society

Graphic communication uses paper, ink, energy and devices on a vast scale. AH asks you to explain the **environmental outcomes** of graphics technologies and to suggest **specific** ways to reduce them, as well as the wider impact of graphics on society.

6.1	The environmental footprint of graphics
6.2	Reducing the impact
6.3	Print vs digital
6.4	Graphics and society

6.1

The environmental footprint of graphics

The **environmental footprint** of a graphic includes everything it uses and produces across its whole life: raw materials, energy, transport and what happens when it is thrown away.

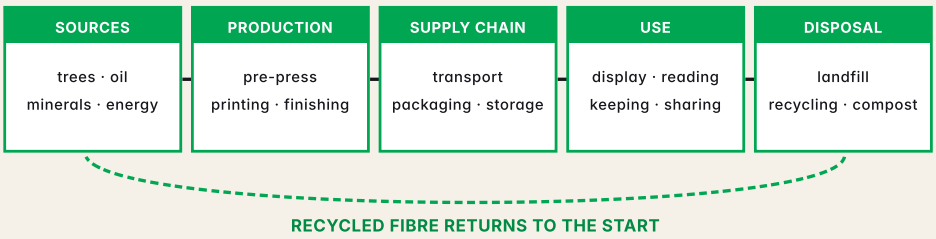


FIG 6.1 · The life cycle of a printed graphic. Every stage is a chance to reduce impact.

6.2

Reducing the impact

Substrates

- Recycled paper and board, or stock certified by the FSC or PEFC (responsibly managed forests)
- Biodegradable or compostable substrates for short-life items such as flyers
- Lighter paper weights where the item allows, which cuts material and postage
- Avoid laminates and plastics that stop paper being recycled

Inks

- Solvent-free inks: water-based, vegetable or soy-based inks
- Inks from natural sources with fewer harmful chemicals and VOCs
- UV-LED curing uses less energy than heat drying
- Solid ink systems avoid cartridge waste

Efficient pre-press

- Soft proofs on screen instead of repeated printed proofs
- Impose (gang) items to fit as many as possible on each sheet, which reduces offcuts
- Computer-to-plate and process-free plates remove film and chemicals
- Print accurate quantities, or print on demand, to avoid surplus stock

Energy

- Energy-efficient presses and printers; switch off rather than standby
- Electricity from renewable sources (solar, wind)
- Print close to where items are distributed to cut transport

FSC / PEFC
Certification schemes showing that paper comes from responsibly managed forests. The logo can be printed on the item.

VOCS
Volatile organic compounds: solvent fumes released by some inks and coatings. They are harmful to air quality and to workers.

COURSE REPORTS 2024–2025
Answers were often **generic** ("use recycled paper"). Make every point specific to the item: *"print the flyers on a biodegradable substrate, because flyers are thrown away within days."*

READ THE EXCLUSIONS
2024: *"You must not make reference to types of ink or recycled paper."* So you also need ideas about energy, imposition, substrates and quantities.

6.3

Print vs digital

Swapping printed graphics for **digital displays or online sources** isn't automatically greener. You need to weigh both sides.

Advantages of digital for the environment

- No paper or ink, and no printed waste when information changes
- No solvent-based inks
- No transport of printed stock
- Screens last for years and can show endless updates
- Displays can run on renewable energy

Disadvantages of digital for the environment

- Screens and devices use large amounts of natural resources to make
- Constant electricity use; impact depends on the energy source
- LED screens add to light pollution in towns
- Electronic waste is hard to recycle
- Data storage and streaming use energy in data centres

2025 MI: DIGITAL ADVERTS

Advantages: no hard copies, no solvent inks, screens last a long time, can run on renewables. Disadvantages: light pollution, natural resources to make screens, electricity use.

2026 MI: VRML FOR SOCIETY

Credited: new jobs; easier access for a wide range of people; viewing from any location; interactive and accessibility features (language selectors, audio guides); less travel.

6.4

Graphics and society

IMPACT	POSITIVE	NEGATIVE
Accessibility	Subtitles, captions, alt text, adjustable text size and language options let more people access content	Poor contrast, tiny text or video without captions excludes people
Representation	Inclusive images and silhouettes let everyone see themselves in a campaign	Stereotypes and narrow imagery can exclude or offend
Information	Clear graphics help people find, understand and act on information quickly	Misleading advertising, edited images and misinformation spread quickly online
Work and skills	New jobs in motion graphics, UX, VR and video editing	Automation and AI tools change or remove some traditional roles
Access	Online graphics reach people anywhere, at any time	The digital divide: not everyone has devices, data or skills

DIGITAL DIVIDE

The gap between people who have easy access to digital devices and the internet and those who don't.

QUICK CHECK

Environment & society

1 Describe **two** ways the festival could reduce the environmental impact of 20 000 printed programmes, without referring to recycled paper. 2

2 Explain one environmental advantage and one disadvantage of replacing printed posters with digital screens in Stonehaven. 2

3 Describe how efficient pre-press can reduce waste. 2

4 Explain **two** positive impacts on society of adding captions to the festival promo video. 2



Animation

Moving graphics now outnumber printed ones: adverts, app interfaces, instructions, music visuals and social posts. You need to know three animation techniques, six post-editing techniques and four file types: what each is for and how it is set up.

7.1	Motion capture
7.2	Stop-frame animation
7.3	Motion tweening
7.4	Post-editing techniques
7.5	Animation file types

7.1

Motion capture

Motion capture (mo-cap) records the movement of a real person, animal or object as data, then applies that data to a digital character or model. The movement is captured, not drawn.

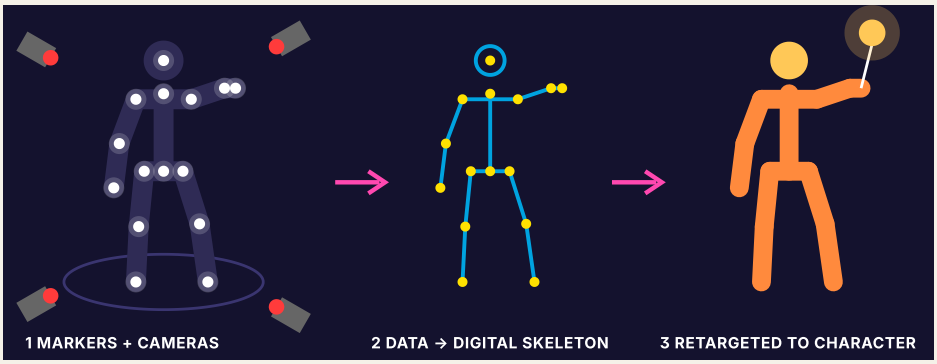


FIG 7.1 · Optical motion capture: reflective markers on joints, tracked by infrared cameras, become a digital skeleton that drives a character.

Set-up requirements

1. Calibrate the **capture volume** (the space the cameras can see)
2. Attach **markers** at the joints of a skin-tight suit (or use inertial sensors)
3. The performer holds a calibration pose (e.g. a T-pose) so the software can build the skeleton
4. Record the takes; facial markers can capture expressions
5. **Clean the data** (fill gaps, remove jitter), then retarget it to the character rig

Where it's used

- Films and games: realistic human and creature movement
- Sport and biomechanics: analysing technique
- Product testing: e.g. tracking a kayak and paddler down a course to measure range of movement and speed
- Ergonomics: how people use spaces and products

Advantages

- Records human movement accurately, so animation looks believable
- Fast: complex motion captured in real time
- Data can be edited to create new movements and character traits
- Several performers can be captured together

Disadvantages

- Costly studios and equipment, or outsourcing to specialists
- Needs trained performers to give the right movements
- Huge amounts of data need specialist clean-up
- Impossible movements (cartoon squash and stretch) still need hand animation

MARKER-BASED VS MARKERLESS

Optical systems track reflective or LED **markers**. **Markerless** systems use computer vision on ordinary video. **Inertial** suits use motion sensors and need no cameras.

2025 MI

Advantages credited: accurate recording of human movement; data can be edited for unique movements; real-time results; realistic, lifelike animation. Disadvantages: cost; need for trained actors; vast amounts of data needing specialist post-processing.

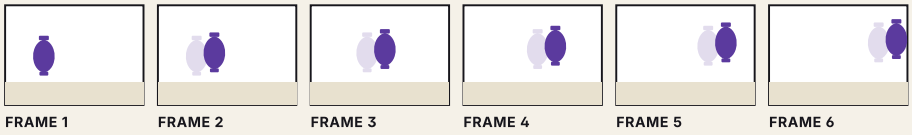
2022: THINK BEYOND FILM

Most candidates assumed motion capture was only for CGI or promotional videos. It was being used to **test a product**.

7.2

Stop-frame animation

Stop-frame (stop-motion) animation photographs a physical object, moves it very slightly, then photographs it again. Played back in sequence, the still frames create the illusion of movement.



MOVE THE OBJECT A LITTLE → TAKE A PHOTO → REPEAT. FAINT = ONION SKIN OF THE LAST FRAME.



FIXED CAMERA ON A TRIPOD · LOCKED EXPOSURE, FOCUS + WHITE BALANCE

12 PHOTOS = 1 s AT 12 fps · 24 PHOTOS = 1 s AT 24 fps

FIG 7.2 · Six frames of a lantern moving, with onion-skinning.

Set-up requirements

1. Fix the camera on a **tripod** (or a phone on a stand) so it can't move between frames
2. Use **consistent lighting**: block out daylight, which changes and flickers
3. Set the camera to **manual**: lock exposure, focus and white balance
4. Choose the **frame rate** (often 12 fps for simple work, 24 fps for smooth motion)
5. Use **onion-skinning** in the app to judge each small movement
6. Build puppets or models with armatures so poses hold still

Typical uses

- Distinctive, handmade-looking adverts and music videos
- Product animations (products appear to assemble themselves)
- Social media content and student projects
- Clay, paper cut-out, LEGO and object animation

Advantages (for a user)

- Easy for beginners to understand and start
- Works on everyday devices with a camera, so it's accessible
- No specialist hardware or software; many free apps
- Cheap raw materials; a unique tactile style

Disadvantages

- Very time-consuming: 24 photos for one second at 24 fps
- Small, accurate movements are hard to achieve consistently
- Poor lighting or set-up gives flicker and a poor-quality video
- Hard to edit a movement once the frames are shot

FRAME RATE (FPS)

Frames shown per second. Film uses 24 fps, UK broadcast TV 25 fps, web video often 30 or 60 fps.

ONION-SKINNING

Showing faint copies of the previous frame(s) over the live view, so the animator can judge the next small movement.

2024 MI: STOP-FRAME APP

Advantages credited: easy to understand for inexperienced users; works on a range of devices with cameras; no specialist hardware or software. Disadvantages: small accurate movements are difficult; time-consuming; lighting or set-up problems lower quality.

7.3

Motion tweening

In **motion tweening** the animator sets the object's position (and size, rotation or colour) at a **start keyframe** and an **end keyframe**. The software calculates every frame in between ("in-betweening", shortened to *tweening*).

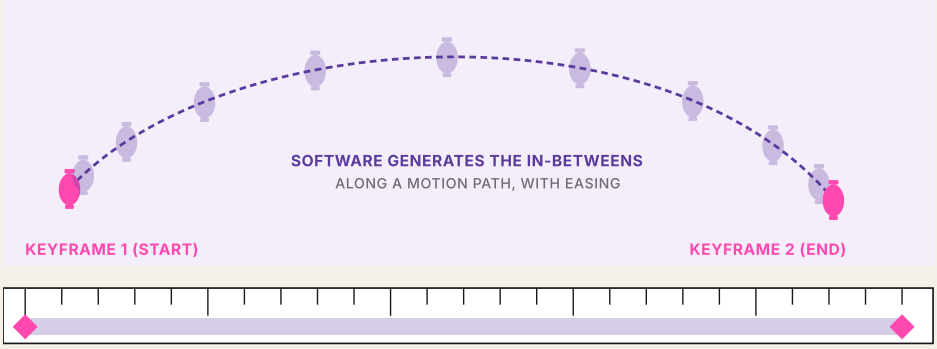


FIG 7.3 · A lantern tweened along a curved motion path with easing. Only the two pink keyframes were set by the animator.

Set-up requirements

1. Set the document **frame rate**, size and the animation's **duration**
2. Put each moving object on its **own layer**
3. Set the **start and end keyframes** (position, scale, rotation, opacity)
4. Draw or adjust the **motion path** so parts move efficiently and don't clash
5. Apply **easing** so movement speeds up and slows down naturally
6. Choose camera positions and zoom for clarity, then preview and refine timings

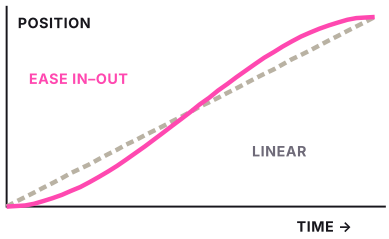


FIG 7.4 · Easing makes movement start and stop gradually, as real objects do.

Advantages

- Only start and end points are needed, so it's much faster than frame-by-frame
- Smooth, consistent movement along a defined path
- Easy to edit timing, path or speed afterwards
- Many objects can be animated at once
- Good for simplifying and emphasising key movements, e.g. assembly instructions

COURSE REPORT 2026

Most candidates confused motion tweening with **stop motion**. Tweening is computer-generated in-betweens between keyframes; stop-frame is a sequence of photographs.

2024 MI: SET-UP FOR ASSEMBLY ANIMATION

Credited: correct frame rate or number of steps; correct path so parts move efficiently to their positions; correct speed; a path that avoids parts crossing; camera positions and zoom that maximise clarity; suitable start and end points.

KEYFRAME

A frame where the animator defines a property value. Everything between keyframes is interpolated.

7.4

Post-editing techniques

Post-editing happens after the footage or animation is made. In editing software, clips are arranged on a **timeline** and enhanced to improve **visual impact**, **accessibility** and **understanding**.

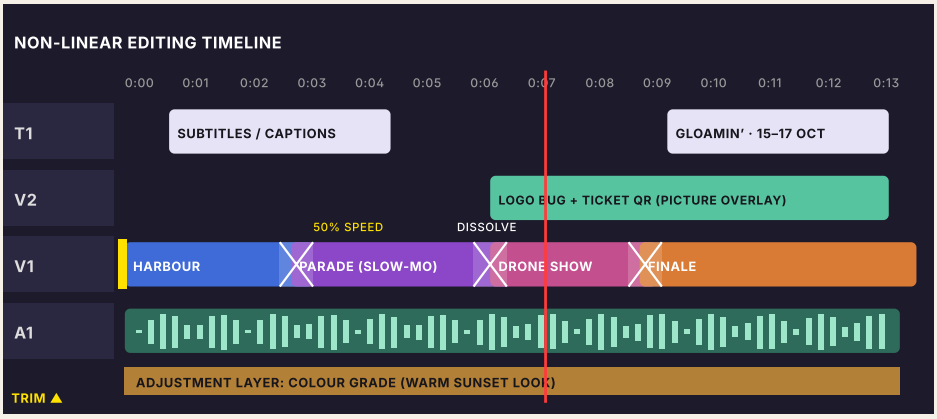


FIG 7.5 · Part of the GLOAMIN' promo (the first 13 seconds of 15) on a non-linear editing timeline.



EACH TRANSITION JOINS CLIP A (INDIGO) TO CLIP B (ORANGE)

FIG 7.6 · Five common transitions.

TECHNIQUE	WHAT IT IS	HOW IT ENHANCES THE VIDEO
Transitions	Blend, fade, dissolve, zoom, wipe or cut between clips.	Smooth joins; signal a new scene or step; add interest; fade to black shows the end.
Text overlays	**Subtitles** (spoken words written on screen) and **captions** (descriptions, including sounds); titles and labels.	Accessibility for deaf and hard-of-hearing viewers; other languages; videos watched with the sound off; reinforce key information.
Picture overlays	Extra graphics on top of the video: logos, icons, arrows, diagrams, picture-in-picture, QR codes.	Brand identity; point out detail; add information without new footage.
Speed changes	Slow motion, fast motion, time-lapse, speed ramps.	Slow motion reveals detail (e.g. a technique); fast motion compresses long processes; adds drama.
Trimming	Cutting the start and end of clips, or removing unwanted frames.	Keeps the video short and focused; removes mistakes; controls pace and timing.
Filters & visual effects	Colour correction and **colour grading**, blur, vignettes, glows.	Consistent look across clips; mood (warm sunset grade for GLOAMIN'); brand style; visual impact.

2026 MI: TWEENING + POST-EDITING (8 MARKS)

Post-editing points included: fades or blends so scenes run smoothly; transitions to show a new skill is starting; fade to black for the end; subtitles; captions to help understanding; zoom to make exercises clearer; picture overlays of stills.

2022 AND 2023

Candidates struggled to describe edits in context, and in 2023 wrote about **game edits** rather than **video editing**. Use the correct terms and link each to its purpose.

FUNCTION VS EXPERIENCE

For instructional video, the 2023 MI did not credit transitions as an advantage, because they improve the experience rather than the **essential function**.

7.5

Animation file types

The specification names four animation file types. Choose by **where** and **how** the animation will be played: editing, streaming, social media, embedded in an app or looping on a web page.



AUDIO VIDEO INTERLEAVE

APPLE QUICKTIME MOVIE

MOVING PICTURE EXPERTS GROUP

GRAPHICS INTERCHANGE FORMAT

TYPE	WHAT IT IS	STRENGTHS	LIMITATIONS
.avi	Audio Video Interleave: Microsoft's container format (1992)	Universal on Windows and widely supported; can store video with little compression for high quality and editing	Large files; poorly suited to streaming and the web; limited support for modern features
.mov	Apple QuickTime Movie container	High-quality playback; stores separate video, audio, text and timecode tracks; excellent for editing; embeds well in apps and web	Large files; may need QuickTime or a compatible player on some platforms
.mpeg / .mp4	Moving Picture Experts Group standards. MPEG-1/2 (.mpeg, .mpg) for DVD and broadcast; MPEG-4 (.mp4) is today's standard	Very widely compatible (browsers, phones, social media); efficient compression keeps quality while cutting file size and download time; supports subtitles, chapters and streaming	Lossy: repeated re-encoding loses quality
.gif	Graphics Interchange Format: 8-bit image format that can hold simple frame animations	Plays automatically and loops in web pages, email and messaging; no player needed; simple transparency	Max 256 colours (banding in photos); no sound; large files for long or detailed animation

CONTAINER

A file format that holds video, audio and other tracks together (.mov, .mp4, .avi). How the video is compressed inside is decided by the **codec** (e.g. H.264).

COMPRESSION

Reducing file size by removing or summarising data. **Lossy** compression discards detail the eye is unlikely to notice; **lossless** keeps all the data.

SPECIFICATION CHANGE

The 2026–27 specification (v4.0) **removed .3gp**. Past papers (2022, 2025, 2026) still ask about 3gp, a mobile-phone format, so recognise it but focus on .avi, .mov, .mpeg/.mp4 and .gif.

DIFFERENT ADVANTAGE FOR EACH

If asked for one advantage of each file type, give a **different** advantage. The 2022 MI only credited **one** compatibility answer across mpeg and 3gp.

2023 MI: .MOV

Advantages: stores audio and video; good for web use; embeds in apps; high-quality playback. Disadvantages: often needs QuickTime; compression can reduce quality; large files.

QUICK CHECK

Animation

1 Describe **two** advantages and **two** disadvantages of using motion capture to animate dancers for the festival promo. 4

2 Explain why motion tweening would be suitable for an animation showing how to assemble a paper lantern. 2

3 Describe **three** set-up requirements for a stop-frame animation shot on a phone. 3

4 Describe how text overlays could improve the accessibility of the promo video. 2

5 Explain why .mp4 is a suitable file type for sharing the promo on social media. 2

6 State **two** limitations of the .gif format for a 30-second animation. 2



Graphic ownership

Graphics are valuable property. Designers, clients and brands protect them with intellectual property rights and technology, and everyone who uses other people's images must respect those rights. The specification lists six terms to know.

8.1	Intellectual property
8.2	Copyright
8.3	Trade marks
8.4	Registered designs
8.5	Digital rights management
8.6	Watermarks
8.7	Licences, stock images & protecting a brand

8.1

Intellectual property (IP)

Intellectual property is a creation of the mind (a design, a logo, an illustration, a name, an invention) that the law lets its owner control, like physical property. In the UK, IP rights are managed by the **Intellectual Property Office (UK IPO)**.

©

COPYRIGHT

Protects: Original creative work: artwork, photos, illustrations, text, film, music, layouts

How: Automatic: no registration in the UK

Lasts: Creator's lifetime + 70 years for artistic works

™ / ®

TRADE MARKS

Protects: Signs that identify a brand: names, logos, slogans, colours, shapes, sounds

How: Registered with the UK IPO (® only once registered)

Lasts: 10 years, renewable for ever

RD

REGISTERED DESIGNS

Protects: How a product looks: shape, pattern, colours, decoration, packaging, icons, typefaces

How: Registered with the UK IPO

Lasts: Up to 25 years (renewed every 5)

Pat.

PATENTS (not in spec)

Protects: How an invention works: new technical processes and products

How: Registered; must be new and inventive

Lasts: Up to 20 years

INFRINGEMENT

Using protected work without permission, e.g. copying a photo from the web into a poster. Owners can demand removal or payment, or take legal action.

IDEAS AREN'T PROTECTED

A sunset over a castle is an idea anyone can use. A particular illustration of it is protected.

"FOUND ON GOOGLE" ≠ FREE

Most images online are protected by copyright. Use your own work, licensed stock, or content whose licence allows your use, and record the source.

8.2

Copyright

- Protects the **expression** of an idea (the actual artwork, photo, text, video or music), not the idea itself.
- Arises **automatically** when an original work is created and recorded. In the UK there is no register and no fee.
- For artistic and literary works it lasts for the **creator's lifetime plus 70 years**.
- The owner controls copying, adapting, distributing, publishing online and performing the work.
- The © symbol isn't legally required, but it warns others and names the owner: **© GLOAMIN' Festival 2027**.

Who owns the poster?

A designer **employed** by GLOAMIN' creates work owned by their employer. A **freelance** designer owns the copyright in work they're commissioned to create **unless** it is assigned to the client in a signed written agreement. Clients should always agree ownership in the contract.

MORAL RIGHTS

Creators can also have the right to be named as the author and to object to derogatory treatment of their work, even after selling the copyright.

8.3

Trade marks

A **trade mark** is a sign that distinguishes one organisation's goods or services from another's: a name, logo, slogan, colour, shape or even a sound. Registering it gives the owner the exclusive right to use it for the classes of goods and services they register.

TM

Can be used with **any** brand name or logo to claim it as a trade mark, registered or not. Unregistered marks have only limited protection, through the law of **passing off**.

®

Only for marks that are **registered** (e.g. with the UK IPO). Using ® on an unregistered mark is an offence in the UK. Registration lasts **10 years** and can be renewed indefinitely.

Why GLOAMIN' registers its name and logo

- Other events and companies can't use the name or the sun-and-castle logo, or confuse visitors with something similar.
- The festival's **reputation** is protected from association with poor-quality events or merchandise.
- Fake merchandise can be stopped, and income from official merchandise protected.
- The brand can be **licensed**, letting partners use it for a fee and under rules.

8.4

Registered designs

A **registered design** protects the **appearance** of a product or part of a product: its shape, contours, colours, texture, materials or decoration. Graphic designs can be registered too: packaging get-up, icons, logos applied to products, patterns, typefaces.

- Must be **new** and have **individual character**
- Registered with the UK IPO; lasts up to **25 years**, renewed every 5 years
- Gives the right to stop others making, selling or importing products with the same overall look

Example

GLOAMIN' sells a collapsible paper lantern with a pattern of sun rays cut into its sides. The festival registers the **lantern's appearance** as a design, so copies with the same look can't be sold. The **name** on the packaging is protected by the trade mark, and the **artwork** by copyright: three rights on one product.

EXAM PATTERN

"Explain why the company protects the rights to its graphics." Past MIs credited: other companies can't use the name or logo; brand reputation is protected; inferior products can't use the branding; a permission or payment system for others who want to use the images.

SPECIMEN MI WORDING

The specimen MI said the ® symbol gives protection "in copyright law". Strictly, ® is **trade mark** protection. Use the correct term, but expect both ideas to be accepted.

PASSING OFF

Pretending your goods or services are someone else's. It protects unregistered brands, but is harder to prove than infringement of a registered mark.

8.5

Digital rights management (DRM)

DRM is the use of technology to control how digital content (images, video, music, e-books, software, fonts, PDFs) is accessed, copied, shared and used **after** it has been distributed.

Encryption
Content is scrambled; only authorised apps or devices can decrypt it

Licence keys / log-ins
Access is tied to an account, a purchase or a subscription

Usage rules
Limits on copying, printing, editing, sharing or the number of devices

Streaming, not downloading
Users watch or view without getting a copy of the file

Expiry
Access ends after a rental period or when a licence lapses

Tracking
Watermarks and metadata identify the source if content leaks

Why DRM matters to a company

- Protects income: content is paid for, not pirated
- Protects brand reputation and image
- Stops others passing off the brand or its content as their own
- Creates a permission and payment system for anyone who wants to use the graphics
- Keeps the brand's content unique

Drawbacks

- Can frustrate legitimate users (device limits, log-ins)
- Compatibility problems across devices and software
- Can create accessibility barriers, e.g. blocking screen readers
- Determined pirates can get round some systems, though bypassing technical protection measures is unlawful in the UK

8.6

Watermarks

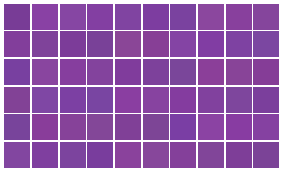


VISIBLE WATERMARK



INVISIBLE (DIGITAL) WATERMARK

HIDDEN IN THE PIXELS:



Tiny changes to pixel values carry an owner ID that is built to survive edits

FIG 8.1 · A visible watermark protects a proof; an invisible digital watermark tracks the published image.

VISIBLE WATERMARK
A logo or text laid over an image, e.g. on stock-library previews and client proofs. It deters copying and advertises the owner, but spoils the image and can be cropped or edited out.

INVISIBLE (DIGITAL) WATERMARK
Information hidden in the pixel or audio data. It can't be seen and is designed to survive common edits such as resizing, compression and some cropping, so it can often prove ownership or trace a leak.

PAPER WATERMARK
Formed in the paper during manufacture and seen against the light. Used on banknotes, certificates and premium stationery.

2025 MI: DRM
Credited reasons: brand reputation protected; inferior products can't use the branding; a permission and payment system; others can't pass off the brand as their own; uniqueness of the brand.

METADATA
Creator, copyright notice and licence stored inside an image file. It travels with the file, but can be stripped.

8.7

Licences, stock images & protecting a brand

Designers constantly use **other people's** images, fonts, music and models. A **licence** is the permission that sets out exactly how you may use them.

LICENCE	WHAT IT ALLOWS
Royalty-free (stock)	Pay once (or by subscription) and use within the licence terms without paying per use. Limits often apply, e.g. no resale as merchandise, no sensitive uses, print-run caps.
Rights-managed	Licensed for a specific use, size, time and territory; the price depends on the use.
Editorial only	News and educational use only, never advertising or promotion.
Creative Commons	Free, with conditions shown by codes: **BY** credit the creator · **SA** share alike · **NC** non-commercial · **ND** no changes · **CC0** no rights reserved.
Font licences	Desktop, web, app and embedding uses can each need a licence. Open-licence fonts (e.g. SIL OFL) can be shared and embedded freely.

Stock libraries: pros and cons

- Huge range of professional, high-quality images
- Saves time: no photoshoot needed
- Clear licence terms and model releases

- Subscription or per-image cost, which may raise the client's price
- The perfect image may not exist (content, style, size, file type)
- Licence conditions may restrict editing or use
- Not unique: competitors can use the same image

Protecting the GLOAMIN' brand: checklist

- Register the name and logo as trade marks (®)
- Copyright notice on all artwork; ownership assigned in designers' contracts
- Register the lantern's design
- Watermark all proofs sent to partners
- DRM on the paid livestream of the drone show
- Licences recorded for every stock image and font

2024 MI: STOCK LIBRARY SITES

Advantages: wide range; high quality; saves time (with justification). Disadvantages: may not find the right image; subscription costs; conditions on editing or use.

2025 MI: OWN VECTORS VS STOCK PHOTOS

Creating your own vectors gives full creative control and **reduces the likelihood of copyright infringement**. Stock images cost money, reduce creative control, may restrict editing and aren't unique to the brand.

IN YOUR PROJECT

Candidates don't get marks for work they have only downloaded. Credit sources and show your own development.

QUICK CHECK

Graphic ownership

1 Explain the difference between the ™ and ® symbols. 2

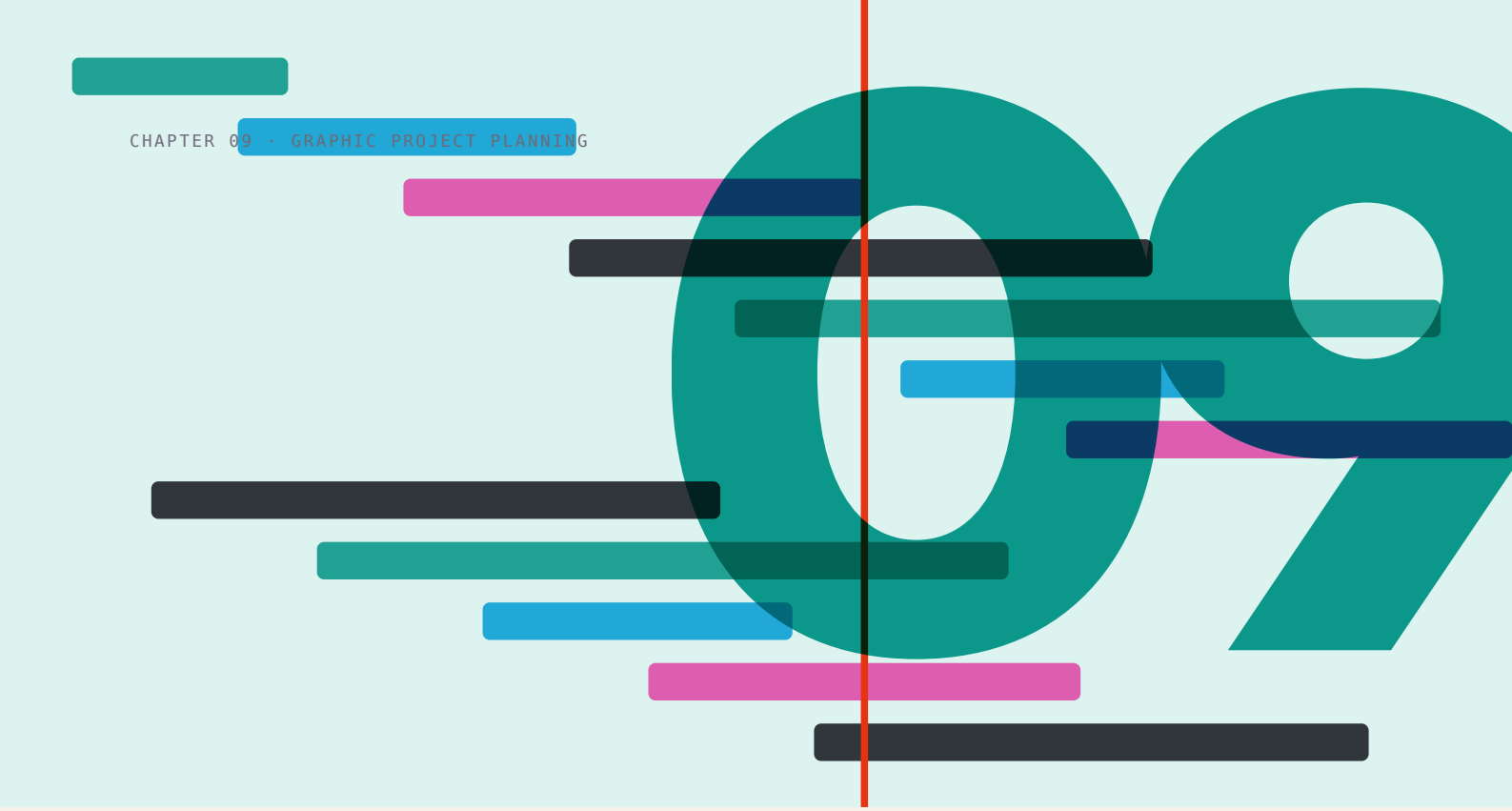
2 Explain **two** reasons why GLOAMIN' should register its logo as a trade mark. 2

3 A freelance illustrator creates the poster artwork. Explain why the festival's contract should deal with copyright ownership. 2

4 Describe **two** ways digital rights management could protect the paid livestream. 2

5 Compare a visible watermark with an invisible digital watermark. 2

6 Describe what a registered design protects, giving an example from the festival. 2



Graphic project planning

Professional graphic projects run to fixed deadlines, often with several creators working at once. Planning tools let a team see what has to happen, in what order, by whom and by when, and adapt when things go wrong.

9.1 What planning must cover

9.2 Anatomy of a Gantt chart

9.3 Review and update

9.1

What planning must cover

The course specification asks for skills in the **use and allocation of time, resources and equipment**, the practical use of planning tools such as **Gantt charts**, the **start and finish dates** of key activities, sub-tasks and intermediate targets, and how plans are **reviewed and updated**.

TIME

Start and finish dates, durations, deadlines and the order tasks must happen in.

RESOURCES

People (designer, animator, printer), budget, materials, stock images, fonts and licences.

EQUIPMENT

Software, computers, cameras, motion-capture studio time, printers, presses and vinyl cutters, booked when needed.

2025 MI: GANTT ON TRACK

Credited: setting key deadlines so all creators know when work must be finished; intermediate targets within main tasks; planning resources for key points; deploying people at key stages; building in client reviews.

2024 MI

Start and finish dates for each piece of work; regular reviews to see if items are on or off track; allocating resources at the right time.

9.2

Anatomy of a Gantt chart

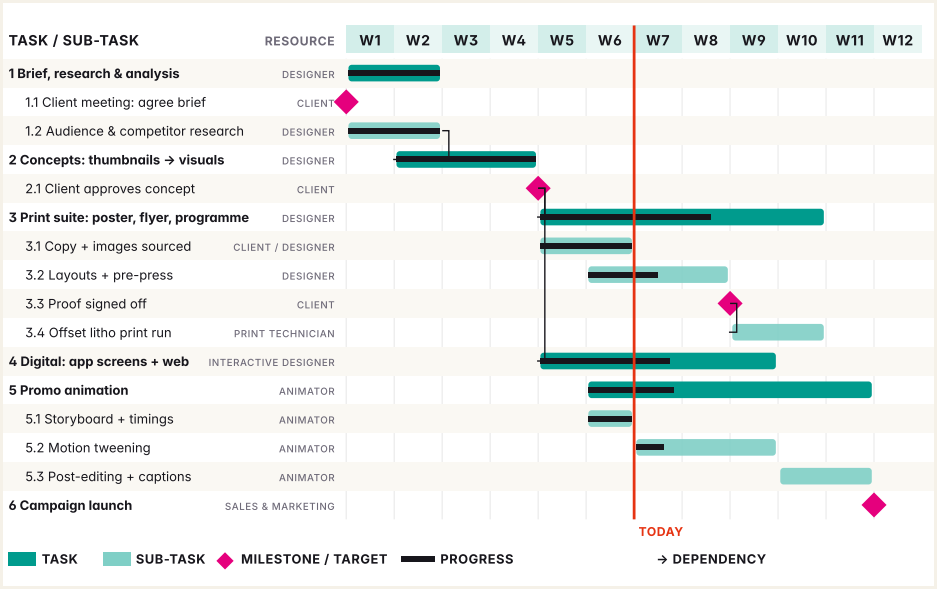


FIG 9.1 · The GLOAMIN' launch campaign: a 12-week Gantt chart in week 7.

- **Tasks and sub-tasks** listed down the left, grouped and numbered
- **Bars** show the start and finish of each activity on the time scale
- **Milestones / intermediate targets** (◆) mark key checkpoints, such as client approval
- **Dependencies** show tasks that can't start until another finishes (no print run before proof sign-off)
- **Resources** show who or what each task needs
- **Progress** and a **today line** show at a glance what is behind schedule

CRITICAL PATH

The longest chain of dependent tasks. Any delay on it delays the whole project.

CONTINGENCY

Spare time or budget built in for problems.

9.3

Review and update

A plan is only useful if it is **kept up to date**. In week 7 the client asks for changes to the programme, so the proof sign-off slips by one week.

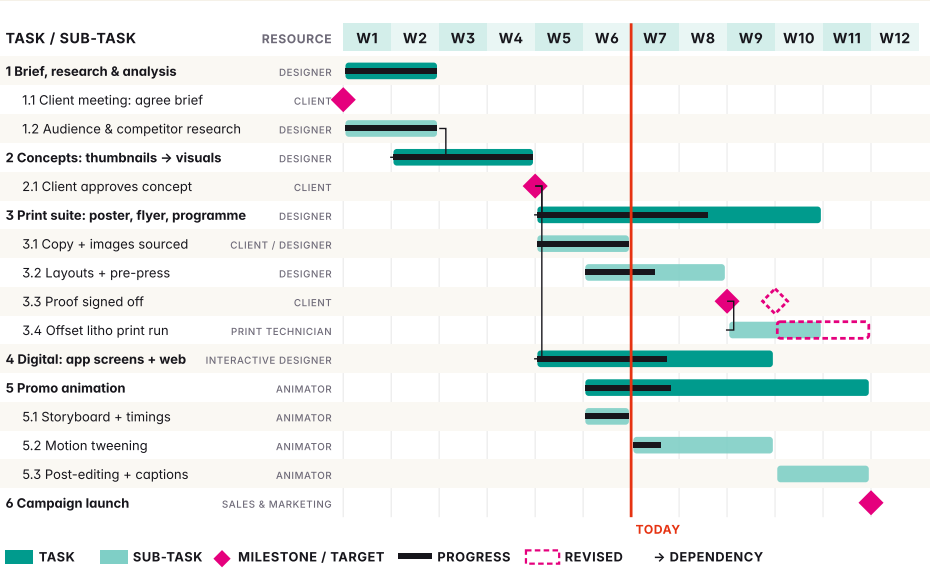


FIG 9.2 · Revised plan: the proof milestone and print run move one week (dashed). The launch date is unchanged: the print run still finishes by the end of week 11, just before the launch, but there is now no contingency left.

Effects of a delay

- Later finish dates for **dependent** tasks (the print run)
- People and equipment re-booked: the printer's press slot moves
- Possible extra cost (overtime, a rush fee)
- Less contingency left before the launch

Actions when updating

- Record the change and the reason
- Revise intermediate targets and dates
- Reallocate resources, or run tasks in parallel to recover time
- Tell everyone affected: client, printer, team

Other planning tools

TOOL	USED FOR
Storyboard	Sequence, timing and transitions of an animation
Flat plan	Page-by-page content of a multi-page document
Task list / Kanban board	To do · doing · done: day-to-day tracking for a team
Calendar / timeline	Key dates and deadlines at a glance

SPECIMEN MI: HAZARDOUS MATERIAL FOUND

Effects credited: more time for the phase; later completion date; extra cost of keeping a team longer; rescheduling materials, equipment and workers; contingency planning; revising intermediate targets.

PROJECT TIP (COURSE REPORTS)

Gantt charts were common but **lacked detail** and didn't link to specifications or key stages. Include key and intermediate stages with realistic timings, and update the plan as you go.



10

MARKS · 20 × A3

The AH project: commercial & visual

The project is worth **half** the course award. This chapter covers the commercial and visual media graphics (CVMG) half and how the knowledge in this booklet turns into marks. The technical graphics half is covered in the DesignClass CAD & Engineering Graphics project.

10.1	Structure, marks and page limits
10.2	Analysis, research and specification
10.3	CVMG planning and preliminary graphics
10.4	The CVMG solution
10.5	Evaluation

10.1

Structure, marks and page limits

An **open brief** chosen with your teacher, worth **90 marks** (50% of the award), marked externally. The evidence is no more than **20 single-sided A3 pages**, and a penalty applies if you exceed that by more than 10%.

SECTION	MARKS	MAX A3 PAGES
Analysing the graphic brief and research	10	2
Graphic specifications (TG 3 + CVMG 3)	6	1
TG preliminary planning	7	2
CVMG preliminary planning (plan 2 + preliminary graphics 5)	**7**	**2**
TG graphic solution	25	6
CVMG graphic solution (digital 9 + print 9 + continuity 2 + analysis 5)	**25**	**6**
Evaluation (TG 5 + CVMG 5)	10	2

Note: the section maxima add up to 21 pages, but your whole project must not exceed 20, so you can't use every section maximum.

10.2

Analysis, research and specification

Analysis and research (10 marks)

- Identify **all the main audience requirements** and explain their relevance for TG **and** CVMG
- Use primary research (surveys, interviews, site visits) and secondary research (publications, online, specialists)
- Draw **valid, evidence-based conclusions**, not narrative
- Formally reference sources (e.g. Harvard)

CVMG specification (3 marks)

- A **separate** specification from TG
- Clearly derived from your research and analysis
- Defines the **range** of graphics, their **format** and the **target audiences**
- Becomes the yardstick for your evaluation

CVMG RESEARCH TOPICS (COURSE REPORTS 2025–26)

Intended audiences (e.g. consumers or retailers); similar existing documents; formats and device compatibility; animation; print factors such as CMYK, paper weight or type and print resolution; digital factors such as RGB, frame rates and accessibility.

SPECIFICATIONS LOST MARKS WHEN…

They weren't linked to research, or didn't confirm the range of graphics to be produced (2024–26).

REASONABLE ASSISTANCE

Teachers may give constructive comment and questions, but not model answers or specific directions once the project has started.

10.3

CVMG planning and preliminary graphics (7 marks)

Project plan (2 marks)
Clear, coherent planning **specific to CVMG**: key timeframes, tasks, sub-tasks and intermediate targets in a sensible sequence, usually a Gantt chart with descriptions. Revisit it and show amendments.

Preliminary graphics (5 marks)
Marked for **creativity** and **relevance** to the chosen digital and print graphics. Use thumbnails, visuals, storyboards and annotated layout ideas. Justify E&P, colour, file types and print or digital requirements in annotations.

The formats your CVMG work must cover

You produce **one digital** and **one print-based** solution, and they must **relate to each other**. Required minimums from the coursework assessment task:

FORMAT	MINIMUM CONTENT
Digital: animation	a start and end frame, **six intermediate frames**, timings, and the key transitions shown visually
Digital: website, app or interactive display	a **minimum of four screens**
Print: suite of graphics	**three** graphic items, e.g. business cards, posters, flyers, logos, lanyards, pull-up display, billboards, vinyl
Print: multiple-page document	a **minimum of four pages** including **one double-page spread**
Print: packaging, point of sale, surface development or display stand	a **minimum of four complete surfaces**

10.4

The CVMG solution (25 marks)

PART	MARKS	TO REACH THE TOP BAND
Digital graphic	9	Serves its purpose on all occasions; meets the format minimum; clear and **ready for digital publication**; very high skill and visual impact
Print graphics	9	Serves its purpose on all occasions; meets the format minimum; clear and **in a format ready for printing** (pre-press); very high skill and visual impact
Continuity	2	Clear continuity between digital and print: shared colour scheme, style, logo, graphics
Analysis and understanding	5	Annotations that justify most of: printing methods, digital media and navigation, E&P, colour space, file types, image sourcing, animation method, transitions, overlays, frame rates and resolution

THE PRINT GATEWAY

In the 4–5 band for print, the descriptor no longer says "ready for printing". To reach 6 or more, print work must be shown **in a pre-press format**: bleed, crop and registration marks and colour bars where relevant, CMYK, correct resolution. Annotate the commercial process you would use.

REPEATED WEAKNESSES

Incorrect pre-press formats · placeholder text · only two print items instead of three · weak visual impact · trying to do too much.

YOUR OWN PRELIMINARY WORK

Preliminary graphics must show your own developing ideas. The coursework assessment task sets strict rules on tracing, measuring and the software allowed for preliminary graphics, so check the current version with your teacher before you start.

10.5

Evaluation (CVMG 5 marks)

A concise, critical evaluation that **justifies the performance of every CVMG item** against your specification and identifies **strengths and weaknesses** in the graphics and the process. Keep it to two A3 pages in total with TG.

Cover

- How **E&P** created visual impact across the items
- How design edits and features improved impact
- How the **printed** graphics meet the target audience's needs
- How the **digital** graphics meet the target audience's needs
- Key decisions, alternatives considered and why

Avoid

- A narrative diary of what you did (2024 report: "too narrative")
- Unsupported claims: "it looks good"
- Ignoring weaknesses: examiners reward honest, specific criticism
- Evaluating anything not in your specification

STRONG · JUSTIFIED STRENGTH + SPECIFIC WEAKNESS

The programme's fast-paced image-led spreads alternate with slower timetable spreads, so families can find events quickly while still having full details; however, the 7 pt type on the map spread was too small for older readers and should have been 9 pt.

CVMG project checklist

- Separate CVMG specification linked to research
- CVMG Gantt chart, updated
- Annotated, creative preliminary graphics for both digital and print
- Digital solution meets its format minimum
- Print solution in pre-press format, with three items, or four pages plus a DPS, or four surfaces
- No placeholder text anywhere
- Continuity between digital and print
- Annotations justify technical choices

EVALUATE THROUGHOUT

Research and evaluation are marked holistically. Notes made at decision points can support your final evaluation.

PRACTICE BRIEF

The **GLOAMIN' CVMG practice brief** in the asset pack lets you rehearse every stage before your own project.

DESCRIBE 11
IDENTIFY
EXPLAIN
COMPARE
STATE

Exam technique

The question paper: 90 marks in 2 hours 30 minutes, usually five or six context-based questions (six in 2024–25, five in 2026) on technical **and** commercial graphics. Knowing the content is half the job; writing answers the way the marking instructions reward them is the other half.

11.1 The question paper
11.2 Command words
11.3 Cause and effect
11.4 Pitfalls from the course reports

11.1

The question paper

90	2:30	5–6	1:40
MARKS · 50% OF AWARD	HOURS	QUESTIONS	MIN:SEC PER MARK

- Every question starts with a short **context** and images, sometimes on a supplementary sheet. Your answers must refer to them.
- Most parts are worth **2 marks**; longer items (6–8 marks) cap each strand.
- You may use sketches and annotations; marks are for the information, not the drawing quality.
- Look for **constraint lines**: "Do not repeat…", "You must not refer to…".

WHERE THE MARKS ARE

The specification samples: techniques and practices (21–25 marks); interpreting and justifying graphics for purpose and audience (35–43); graphic technology (18–23); environment and society (9–14).

USE AH CONTENT

The 2023 report: answers should *"primarily aim to demonstrate their understanding of the Advanced Higher course content"*, using N5 or Higher knowledge only where it's relevant.

11.2

Command words

WORD	WHAT THE MARKING INSTRUCTIONS REQUIRE	EXAMPLE
Describe	A statement or structure of characteristics or features, **not just a list**, in the context of the question. The number of marks = the number of points.	Describe two ways silhouettes enhance the posters.
Explain	Relate **cause and effect**. A simple statement scores nothing.	Explain, giving two reasons, why .jpg was used.
Compare	Similarities and/or differences between things, methods or choices, in context.	Compare visible and invisible watermarks.
State / name / identify	A short, correct answer (often 1 mark). Not defined in the marking instructions; treat as short recall.	Identify a file type suitable for vinyl cutting.

11.3

Cause and effect

The single most useful habit: every explanation links a **feature** (cause) to an **outcome for the user or audience** (effect).

WEAK

CAUSE JPEG files are small.

EFFECT (missing: so what?)

STRONG

CAUSE JPEG compression reduces the image file size

EFFECT so the bike webpage loads quickly on a phone

WEAK

CAUSE Pantone is used.

EFFECT (missing)

STRONG

CAUSE A Pantone reference fixes the exact ink mix for the gold

EFFECT so the invitation's gold matches on every print run and substrate

Deconstructing a question

Q · "Describe, giving two examples, how golden ratio has been used in the design of the key card." **[2]**
→ COMMAND: describe (features, not just a list) · NUMBER: two separate examples · TOPIC: golden ratio only · CONTEXT: the key card, not the hotel logo
→ EACH POINT: *which element + what is proportioned* (size / position) + *where on the card*

TIMING PLAN

150 ÷ 90 ≈ 1 min 40 s per mark, or about 1 min 30 s if you keep 10 minutes to check at the end. A 2-mark part ≈ 3 minutes; an 8-mark part ≈ 12–13 minutes.

SKETCH IT

Where a question says sketches may support your answer, use them: a quick annotated sketch of a golden-ratio layout or a print sheet with marks can earn the mark faster than words.

11.4

Pitfalls from the course reports

1. **Negative space vs white space.** Negative space adds new content; white space is empty. White text is reverse.
2. **Generic file-type answers.** Give a feature specific to that file type, plus its effect in context.
3. **No consequence in explain answers.** Use "...so...", "...which means...", "... therefore...".
4. **Rewording the question.** "Offset litho is suitable because it suits the specification" scores nothing.
5. **Two answers that are really one.** Editing colour and editing layout = one point about editing.
6. **Depth of field vs dynamic effects.** Motion blur follows the direction of travel; depth-of-field blur doesn't.
7. **Tweening vs stop motion.** Tweening = computer in-betweens between keyframes; stop-frame = photographed sequence.
8. **Describing printing instead of the requested process.** If asked how offset litho is set up, describe plates, dampening, ink, registration, crop marks.

12

Glossary

Additive colour
Colour made by mixing light (RGB). Used by screens.

Alt text
A written description of an image for screen-reader users.

Animation file types
.avi, .mov, .mpeg/.mp4, .gif

Asymmetrical balance
Different items of equal visual weight either side of a layout.

Bleed
Artwork extended past the trim (usually 3 mm) to avoid white edges.

Calendering
Smoothing and compressing paper between heavy polished rollers for a smooth or glossy finish.

Camera-ready copy
Final approved artwork that needs no further changes before reproduction.

Captions
On-screen text describing what is seen or heard, including sounds.

CMYK
Cyan, magenta, yellow, key (black): the process inks.

Colour bar
Strip of ink patches outside the trim, measured to check ink density.

Colour calibration
Adjusting devices to a standard so colours match across screen, proof and press.

Colour grading
Stylising the colour of video for mood or brand consistency.

Copyright
Automatic right protecting original creative work (UK: lifetime + 70 years for artistic works).

Creative Commons
Free licences with conditions (BY, SA, NC, ND, CC0).

Crop marks
Lines outside the bleed showing where to trim.

Densitometer
Instrument measuring the optical density of printed ink.

Depth of field
Range of sharp focus; blurring the rest creates a focal point.

Digital rights management
Technology controlling access to, and copying and use of, digital content.

DPI
Dots per inch: printed output resolution.

Duplexing
Printing both sides of a sheet, aligned.

Dynamic effects
Techniques that suggest movement, speed or energy.

Easing
Gradual acceleration and deceleration in an animation.

Edge to edge
Printing to the very edges of the finished item, with no border.

Effective resolution
The ppi of an image at its placed size.

Flat plan
A thumbnail map of all the pages in a multi-page document.

Focal point
The part of a graphic the eye goes to first.

Gamut
The range of colours a device or process can reproduce.

Gantt chart
Bar chart of tasks against time, with milestones and dependencies.

GIF
8-bit (256-colour) format that supports simple looping animation.

Golden ratio
≈ 1 : 1.618 (φ). Used for harmonious proportion and hierarchy.

Gutter
Space between columns, or the inner margins at the spine.

Imposition
Arranging pages or items on a press sheet so they print and fold correctly.

Ink-jet
Printing by spraying microscopic droplets of liquid ink.

Intellectual property
Creations of the mind protected by law: copyright, trade marks, designs, patents.

Keyframe
A frame where the animator sets a value; in-betweens are calculated.

Laser printing
A laser discharges image areas on an evenly charged drum; toner sticks to them and is fused onto paper.

Licence
Permission setting out how someone else's work may be used.

Lossless / lossy
Compression that keeps all data / discards some detail.

Milestone
A key checkpoint or intermediate target in a plan.

12 continued

Glossary

Motion capture
Recording real movement as data to drive a digital character.

Motion tweening
Software generating in-between frames from start and end keyframes.

Negative space
Background deliberately shaped to form new content.

Offset lithography
Planographic printing: plate → rubber blanket → paper, using oil-and-water repulsion.

Onion-skinning
Faint display of previous frames to guide the next movement.

Opacity (paper)
How much light paper blocks; prevents show-through.

Pace
The speed at which a viewer moves through a graphic or sequence.

Pantone (PMS)
Standardised numbered spot colours for consistent colour.

Paper weight
Grams per square metre (gsm).

PDF/X
ISO standard PDFs for reliable print production.

Photo reduction
Reducing an image's size for reproduction, which increases effective resolution.

Picture overlay
Graphics placed over video: logos, arrows, picture-in-picture.

PPI
Pixels per inch: the resolution of a digital image or screen.

Preflight
Checking a file for errors before output.

Proof
A trial version (soft, hard or press) checked before printing.

Radial balance
Elements arranged around, or radiating from, a centre.

Raster
An image made of a grid of pixels.

Registered design
Registered protection for a product's appearance (up to 25 years).

Registration marks
Targets on every plate used to align the colours.

Reverse
Light text or graphics on a dark background.

RGB
Red, green, blue light; the colour space for screens.

RIP
Raster Image Processor: converts artwork into printer dots.

Rule of thirds
3 × 3 grid: key content placed on the lines or intersections.

Safe area
Margin inside the trim that keeps important content safe.

Screen printing
Ink squeegeed through a stencilled mesh, one screen per colour.

Silhouette
A solid outline of an identifiable object or living thing.

Solid ink
Ink sticks melted, jetted onto a drum and transferred to paper.

Spot colour
A pre-mixed ink printed as a solid, e.g. a Pantone colour.

Stop-frame
Animation made from a sequence of photographs of a moved object.

Subtitles
On-screen text of the spoken words.

Subtractive colour
Colour made by inks absorbing light (CMYK).

Text to vector
Converting type to outlines so no font is needed.

Trade mark
A registered (®) or claimed (™) brand sign: a name, logo, slogan or colour.

Transition
An effect joining two clips: cut, fade, dissolve, wipe, zoom.

Trimming
Removing unwanted frames from the start or end of clips.

Vector
A graphic defined by points, lines and curves; it scales without loss.

Watermark
A visible or invisible mark identifying the owner of an image.

White space
Deliberately empty areas that give clarity and rest.

Wide-format
Large ink-jet printing on rolls of vinyl, fabric and paper.

NOTES

NOTES

NOTES

ABOUT THIS BOOKLET

Every graphic you see was designed, checked, printed or animated by someone.

OVERPRINT is the course notes booklet for the DesignClass Advanced Higher Graphic Communication Graphic Design project. It covers commercial and visual media graphics, graphic ownership and project planning for the 2026–27 course specification, with exam guidance drawn from SQA past papers, marking instructions and course reports.

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