CfE
COURSE BOOK
Higher GRAPHIC COMMUNICATION

BrightRED PUBLISHING

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GRAPHIC COMMUNICATION

COURSE BOOK

Peter Linton and Scott Hunter

REVISED AND UP-TO-DATE WITH SQA CHANGES

NEW EDITION

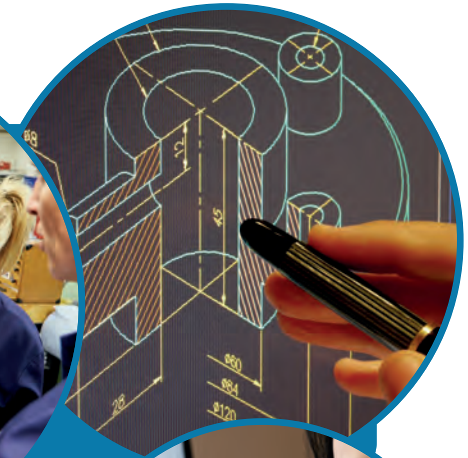
WHY GRAPHIC COMMUNICATION?

PROGRESSION

The graphic communication course offers progression to Advanced Higher and, potentially, on to courses at university or college.

CAREER PATHS

Career routes can take students into: Architecture, Construction, Engineering, Industrial Design, Graphic Design, CAD Technician, Digital Design, Game Design, Urban Planning, Animation, Publishing, Printing and many more.



CREATIVITY

Graphic Communication is a creative process. It involves understanding your target audience and creating graphics which strike a chord with that audience.

PROBLEM SOLVING

Solving complex graphical problems, engineering tasks or construction projects equips GC students with transferable skills and builds the confidence to tackle ever more complex challenges.

RELEVANCE

Students will learn in a creative environment using state of the art 3D CAD software and industry standard DTP software. The resources used in schools can be the same or similar to those found in industry and at university. The relevant nature of this experience can provide a practical bridge to a career or further study.

SKILLS

The diverse range of skills students acquire can lead them from a school experience to working in an industrial environment. Skills such as manual sketching and illustration or complex CAD techniques will add to the skills set of our young people and help prepare them for life beyond school.

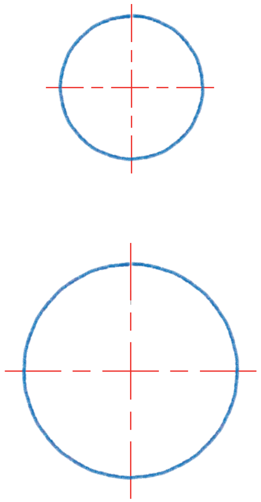
TANGENCY BETWEEN ARCS

TANGENCY - SKILLS

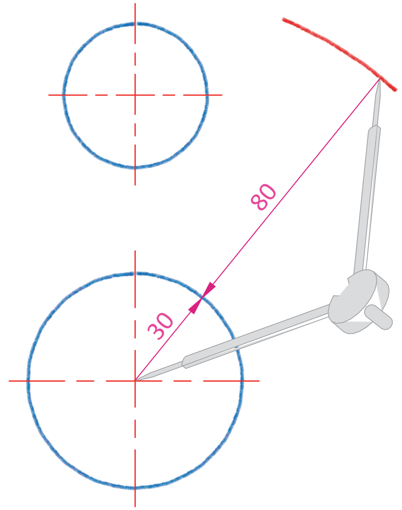
Tangency where two arcs merge is tackled differently. The challenge is to locate the centres of each connecting arc. To do this you will either add or subtract the radii.

This worked example is the number '6' on the number plate; sizes are on the previous page. It can be drawn on the drawing board or using CAD software.

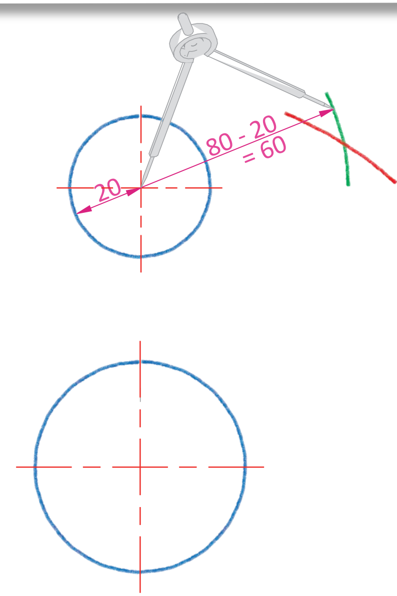
You can be asked questions about tangency in the course exam.



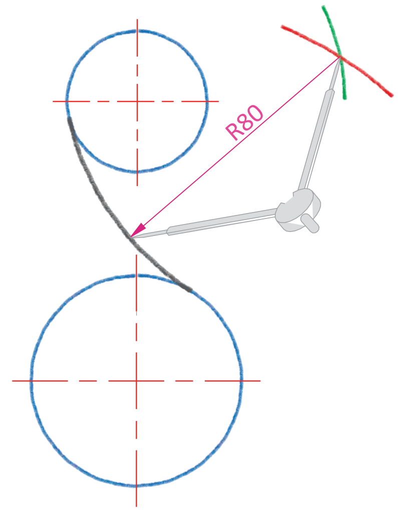
1. Position the circles accurately inside the outline. Draw the centre lines and circles.



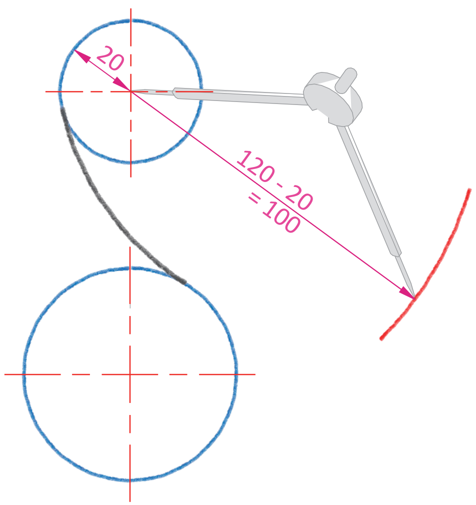
2. Add the radius of the lower circle and the R80 arc: 30 + 80 = 110. Set the compass to R110 and scribe an arc.



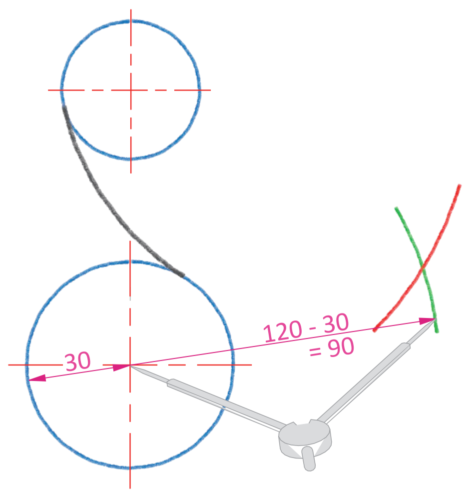
3. Subtract the radius of the top circle from the radius of the connecting arc : 80 - 20 = 60. Set compass and scribe an arc to locate the centre where the arcs cross.



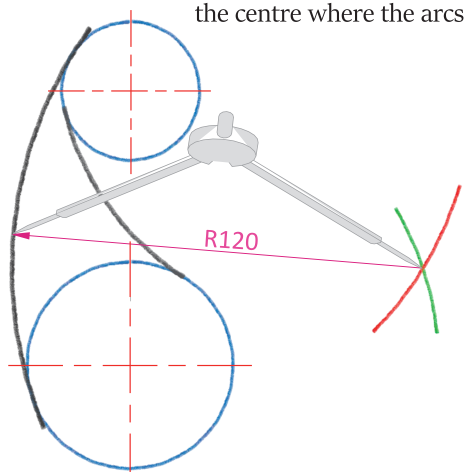
4. Set compass to R80 and draw the connecting arc. It should make a tangent with both of the circles.



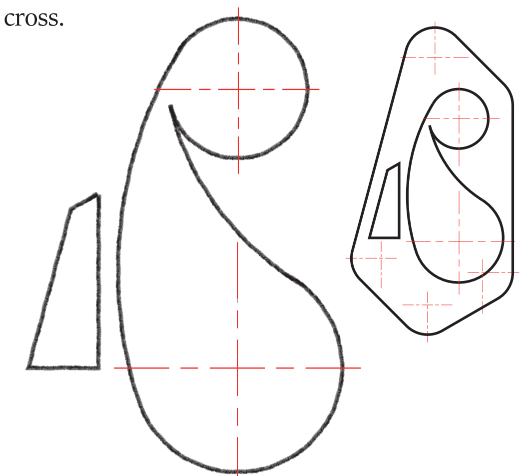
5. Subtract the radius of top circle from the radius of the connecting arc: 120 - 20 = 100. Set compass and scribe an arc.



6. Subtract the radius of the lower circle from the radius of the connecting arc: 120 - 30 = 90. Set the compass and scribe an arc. Crossing arcs locate the centre.

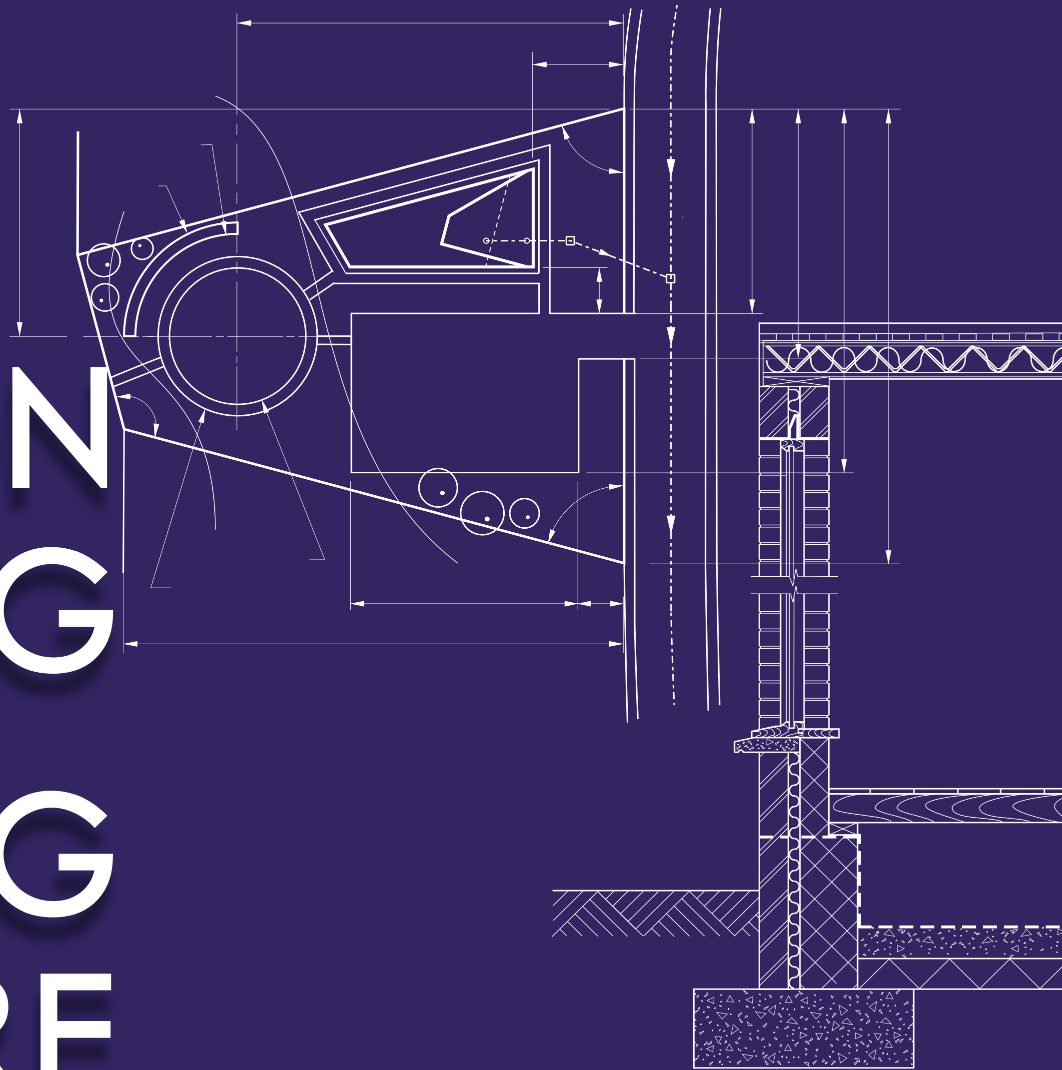


7. Set compass to R120 and draw the connecting arc between the two circles.



8. Firm in the outline and add the number 1. Estimate sizes for the number 1.

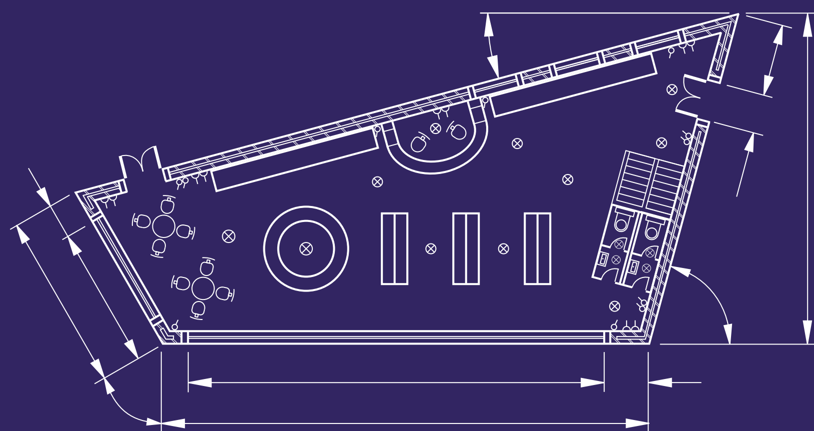
CONSTRUCTION DRAWING



BUILDING THE FUTURE

Like every other man-made product, buildings require a set of drawings to guide the builder and other trades people through the construction process. These drawings have differences to say, production drawings for a chair or a bicycle.

The size of a building means it will need to be drawn to a different scale, in reality, several different scales, and there is more emphasis on plan views. Additionally, there is not the same requirement for hidden detail or exploded views in construction drawings. Otherwise the drawings are pretty similar; some will have dimensions attached and there is a similar reliance on technical detail such as sectional views.



VOLUMETRIC LIGHTING

Volumetric - sometimes called emissive - lighting is an advanced technique used to show a ray of light emanating from a source. This can make scenes appear more realistic and dramatic. It is also a good technique for focusing attention on a specific item.

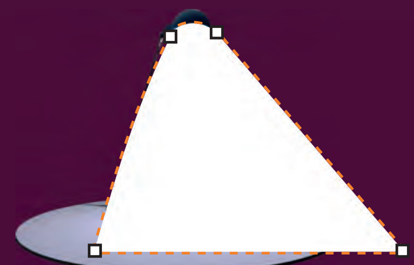
Volumetric lighting will seriously slow down your computer and make rendering times far longer. You are best saving volumetric lights for your final render...

SEE THROUGH MATERIALS

Reflection and refraction are two terms you may learn from studying physics and having an understanding of them can help you to create realistic renderings. Reflection describes the amount of light that will bounce off a given surface, whilst refraction - often called transmission - is the light that will pass through a surface. Materials such as water or glass will have a ratio of reflection and transmission. The precise amount is determined by the 'Fresnel effect', an option your rendering software may well have.

LIGHT, BUT WITHOUT THE HASSLE

If you are creating your own fake volumetric lighting effect, you will likely be using a radial or focal light in your scene. Create your render as normal and import it to an illustration package.



Draw the 'ray' of light that you want as a closed shape within your illustration package. Fill this with colour of light ray that you want, in this case white. Try to think how the light will spread from the light source.

Use the transparency tools to soften your shape. Using some of the elliptical or radial transparency settings will likely give a better effect. Don't be afraid to use multiple 'rays' to build up the effect you want.

BrightRED Course Books

NEW EDITION

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GRAPHIC COMMUNICATION

Peter Linton and Scott Hunter

This BrightRED Curriculum for Excellence Course Book is everything you need for Higher Graphic Communication! Written by trusted authors and experienced teachers, Peter Linton and Scott Hunter, it contains full coverage of the SQA arrangements for Higher Graphic Communication and offers first class content to support the course. It is an essential resource for the qualification and also offers a number of important features:

- **Provides all the essential course information you need, fully up-to-date with SQA course changes**, organised into manageable chapters for easy navigation.
- **Contains high quality** illustrations and diagrams to aid your study.
- **Exam prep questions** in every chapter let you test your knowledge on all topics.
- **Worksheet alerts** direct you to downloadable material to support you with your tasks.
- **Clear definitions** are provided for all important terms in the course to reinforce learning.
- **Includes a completely revised and comprehensive guide** to the course assignment, including practice for the real thing.

Complete course support for Higher from BrightRED publishing!

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ISBN 978-1-84948-341-4

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