

CONSTRUCTION
FUTURES



**SCHOOL
EXCURSION**

PROGRAM

YEAR 9
TEACHERS' NOTES AND
CURRICULUM LINKS



TEACHERS' NOTES

The Construction Futures Centre is an interactive venue with a range of exhibits that highlight the careers available in Western Australia's building and construction industry and demonstrates the industry's significance to the economic and social wellbeing of the State.

During a visit to the Construction Futures Centre students will have a range of interactive learning experiences that support the Western Australian Curriculum, particularly in STEM areas.

The Centre integrates real life examples of STEM in the Building and Construction industry using virtual reality, augmented reality, videos and games to educate and inspire students about the diverse career opportunities available in the industry and the practical applications of the skills and knowledge they are learning at school.

The exhibits within the Construction Futures Centre can be linked to areas of the Western Australian Curriculum shown on the following pages.



LINKS TO THE WESTERN AUSTRALIAN CURRICULUM

CONTENT DESCRIPTORS







Humanities and Social Sciences

The way the work environment is changing in contemporary Australia and the implication for current and future work ([ACHEK042](#))

The population movements and changing settlement patterns during the Industrial Revolution ([ACDSEH080](#))

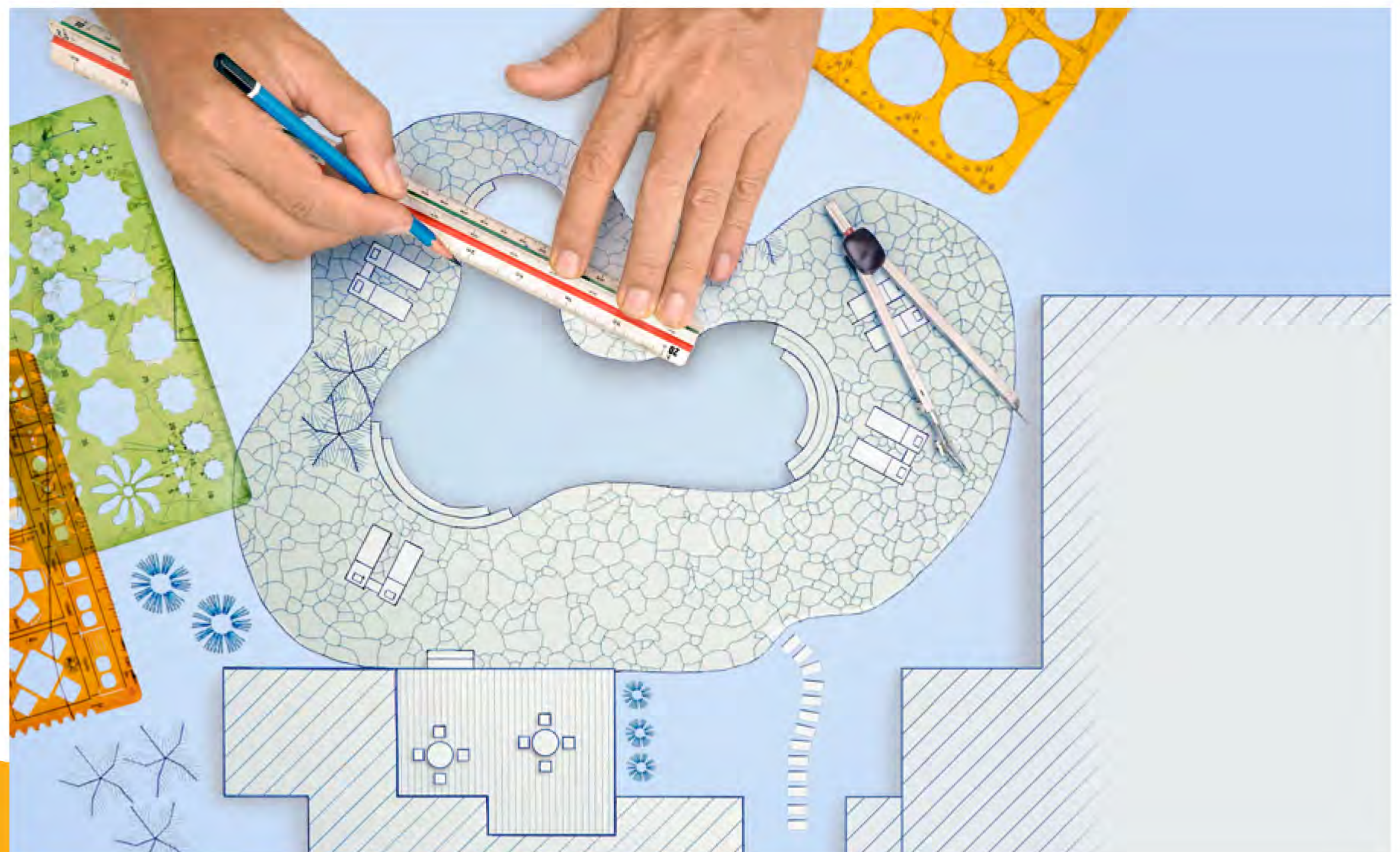
The way transportation, and information and communication technologies are used to connect people to services, information and people in other places ([ACHGK066](#))

GENERAL CAPABILITIES

-  Personal and social capability
-  Ethical Understanding
-  Numeracy
-  Critical and creative thinking
-  ICT capability
-  Critical and creative thinking

LINKS TO EXHIBITS

- Historical display
- It all starts with planning
- Civil Construction Interactive
- Civil video stations
- Water you doing?
- Occupations Oracle
- Commercial Design area
- Residential area - accounts officer, Interior Designer, Scheduler, Estimator, Environmental Advisor, Building Designer and Drafter
- Apprentice Stories



LINKS TO THE WESTERN AUSTRALIAN CURRICULUM

CONTENT DESCRIPTORS

Mathematics

Solve problems involving direct proportion. Explore the relationship between graphs and equations corresponding to simple rate problems ([ACMNA208](#))

Calculate areas of composite shapes ([ACMMG216](#))

Calculate the surface area and volume of cylinders and solve related problems ([ACMMG217](#))

Investigate very small and very large time scales and intervals ([ACMMG219](#))




Solve problems using ratio and scale factors in similar figures ([ACMMG221](#))

Investigate Pythagoras' Theorem and its application to solving simple problems involving right-angled triangles ([ACMMG222](#))




Use similarity to investigate the constancy of the sine, cosine and tangent ratios for a given angle in right-angled triangles ([ACMMG223](#))

Apply trigonometry to solve right-angled triangle problems ([ACMMG224](#))




GENERAL CAPABILITIES



-  Numeracy
-  Critical and creative thinking
-  Literacy

-  Numeracy



-  Literacy
-  Numeracy
-  Critical and creative thinking

-  Numeracy

-  Literacy
-  Numeracy
-  Critical and creative thinking

-  Literacy
-  Numeracy

-  Numeracy

-  Literacy
-  Numeracy

LINKS TO EXHIBITS

- It all starts with planning
- Civil Construction Interactive
- Civil Construction videos
- 3D Commercial building model
- Team Crane (VR Crane & Dogman/ Rigger)
- Maths in Construction
- Mix it Up
- Creative Brickwork
- The mobile office
- Water you doing?
- Refrigeration/Air Conditioner
- Technology Showcase
- Commercial Building Designer
- Building Designer
- Residential Drafter
- Environmental Designer/ Advisor
- Estimator
- Scheduler
- Accounts Officer

LINKS TO THE WESTERN AUSTRALIAN CURRICULUM

CONTENT DESCRIPTORS

Science

Energy transfer through different mediums can be explained using wave and particle models ([ACSSU182](#))

Chemical reactions involve rearranging atoms to form new substances; during a chemical reaction mass is not created or destroyed ([ACSSU178](#))

Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community ([ACSHE157](#))

Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries ([ACSHE158](#))

People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities ([ACSHE160](#))

Values and needs of contemporary society can influence the focus of scientific research ([ACSHE228](#))

GENERAL CAPABILITIES

 Ethical understanding

 Ethical understanding

LINKS TO EXHIBITS

- Civil section including cross section of a road
- Civil Construction interactive
- Commercial Design area (3D printed model & AR viewer)
- Team Crane (VR Crane & Dogman/Rigger)
- Residential set
- Mix it Up
- Water you doing?
- Technology showcase
- Environmental Designer/Adviser
- What's Behind a Wall?
- Occupations Oracle
- 3D Commercial building model



LINKS TO THE WESTERN AUSTRALIAN CURRICULUM

CONTENT DESCRIPTORS

Technologies: Design and Technologies

- Social, ethical and sustainability considerations that impact on designed solutions ([ACTDEK040](#))
- Development of products, services and environments, with consideration of economic, environmental and social sustainability ([ACTDEK041](#))
- The characteristics and properties of materials, combined with force, motion and energy to create solutions ([ACTDEK043](#))
- Characteristics and properties of materials, systems, components, tools and equipment used to create designed solutions ([ACTDEK046](#))
- Technologies can be combined and used to create designed solutions ([ACTDEK047](#))

GENERAL CAPABILITIES

- Literacy
- Critical and creative thinking
- Personal and social capability
- Ethical understanding
- Literacy
- Critical and creative thinking
- Personal and social capability
- Ethical understanding
- ICT capability
- Numeracy
- Critical and creative thinking
- ICT capability
- Critical and creative thinking
- ICT capability
- Critical and creative thinking

LINKS TO EXHIBITS

- Induction video
- It all starts with planning
- Civil Construction Interactive
- Civil video stations
- Commercial Design
- The mobile office
- Technology Showcase
- Commercial Building Designer
- Building Designer
- AR viewer (commercial & residential)
- Environmental Designer/ Advisor
- Team Crane
- What's Behind?
- Commercial 3D printed building model





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Year 9 HASS Syllabus: Year level descriptions retrieved 25 May 2020 from <https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser/humanities-and-social-sciences#year-9-syllabus>.
Year 9 Mathematics Syllabus: Year level descriptions retrieved 25 May 2020 from <https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser/mathematics-v8#year-9-syllabus>.
Year 9 Science Syllabus: Year level descriptions retrieved 25 May 2020 from <https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser/science-v8#year-9-syllabus>.
Year 9 Technologies Syllabus: Year level descriptions retrieved 25 May 2020 from <https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser/technologies/design-and-technologies#year-9-syllabus>.
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