

**CONSTRUCTION
FUTURES**



**SCHOOL
EXCURSION**

PROGRAM

**YEAR 10
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 the following areas of the Western Australian Curriculum.



LINKS TO THE WESTERN AUSTRALIAN CURRICULUM

CONTENT DESCRIPTORS

Geography: Environmental change and management

The human-induced environmental changes that challenge sustainability (ACHGK070)

GENERAL CAPABILITIES

-  Critical and creative thinking
-  Ethical understanding

LINKS TO EXHIBITS

- Historical display
- It all starts with planning
- Civil Construction Interactive
- Civil video stations
- Water you doing?



LINKS TO THE WESTERN AUSTRALIAN CURRICULUM

CONTENT DESCRIPTORS

Science

Different types of chemical reactions are used to produce a range of products and can occur at different rates ([ACSSU187](#))


Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community ([ACSHE191](#))


Advances in scientific understanding often rely on technological advances and are often linked to scientific discoveries ([ACSHE192](#))


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 ([ACSHE194](#))

Values and needs of contemporary society can influence the focus of scientific research ([ACSHE230](#))

GENERAL CAPABILITIES

 Numeracy

 Ethical Understanding

 Numeracy

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

Mathematics

Apply the four operations to simple algebraic fractions with numerical denominators ([ACMNA232](#))

Solve problems involving surface area and volume for a range of prisms, cylinders and composite solids ([ACMMG242](#))

Solve problems involving surface area and volume of right pyramids, right cones, spheres and related composite solids ([ACMMG271](#))

Formulate proofs involving congruent triangles and angle properties ([ACMMG243](#))



Establish the sine, cosine and area rules for any triangle and solve related problems ([ACMMG273](#))



Solve right-angled triangle problems including those involving direction and angles of elevation and depression ([ACMMG245](#))



Solve simple trigonometric equations ([ACMMG275](#))

Apply Pythagoras' Theorem and trigonometry to solving three-dimensional problems in right-angled triangles ([ACMMG276](#))



GENERAL CAPABILITIES



-  Numeracy
-  Critical and creative thinking



-  Literacy
-  Numeracy

-  Numeracy
-  Critical and creative thinking

-  Numeracy

-  Numeracy
-  Critical and creative thinking

-  Literacy
-  Numeracy

-  Numeracy
-  Critical and creative thinking

-  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

Technologies: Design and Technology

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 10 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-10-syllabus>
Year 10 Science Syllabus: Year level descriptions
Retrieved 25 May 2020 from <https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser/science-v8#year-10-syllabus>
Year 10 Mathematics Syllabus: Year level descriptions
Retrieved 25 May 2020 from <https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser/mathematics-v6#year-10-syllabus>
Year 10 Technologies Syllabus: Year level descriptions
Retrieved 25 May 2020 from <https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser/technologies/design-and-technologies2#year-10-syllabus>
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