

CONSTRUCTION
FUTURES



**SCHOOL
EXCURSION**

PROGRAM

YEAR 9

DESIGN YOUR OWN HOME



PURPOSE OF ACTIVITY

To enable students to apply mathematical processes to calculate the areas of composite shapes while assessing home designs.

As an outcome of this series of activities, students will have a greater understanding of mathematical concepts inherent in building design and the skills and careers related to this component of the construction industry.

LEARNING ACTIVITY OVERVIEW

Students apply mathematical principles and skills to determine the best floor design for a home taking into account the best use of space for a block of land.

CURRICULUM LINKS

Mathematics P-10 Syllabus

- Units of measurement.
- Calculate areas of composite shapes.

English P-10 Syllabus (9)

Creating Texts

- Creating different types of spoken, written and multimodal texts using knowledge of text structures and language features.
- Create imaginative, informative and persuasive texts that present a point of view and advance or illustrate arguments, including texts that integrate visual, print and/or audio features.

General Capabilities – Numeracy

- Using spatial reasoning element.
- Visualise, describe and analyse the way shapes and objects are combined and positioned in the environment for different purposes.

General Capabilities – Literacy

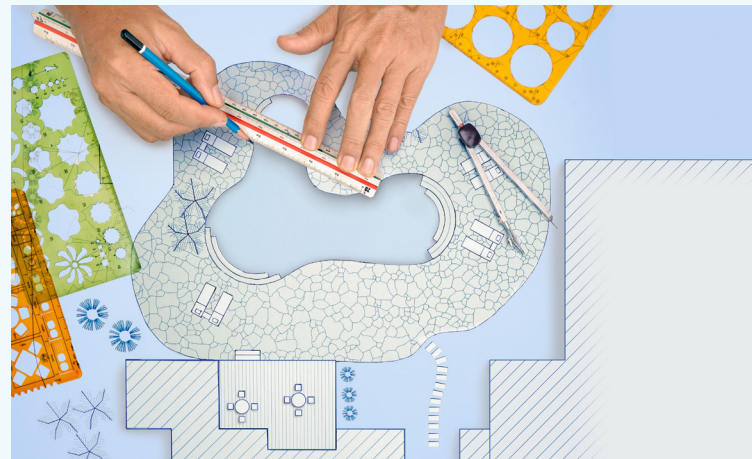
Composing texts through speaking, writing and creating element.

- Use language to interact with others.
- Use pair, group and class discussions and formal and informal debates as learning tools to explore ideas, compare solutions, evaluate information and ideas, refine opinions and arguments in preparation for creating texts.

General Capabilities – Information and Communication Technology

Creating with ICT element.

- Generate ideas, plans and processes.
- Use appropriate ICT to collaboratively generate ideas and develop plans.





LEARNING ACTIVITY

BEFORE VISITING THE CONSTRUCTION FUTURES CENTRE

Students discuss the process of home design, in particular how to make the best use of a block of land to provide maximum useable space.

Examining at the outlines of a range of blocks of land that are different sizes and shapes, students discuss what overall shape of house may make best use of each.

Students also examine a range of floor plans for different houses and identify the main shapes used in building construction.

Students practice calculating the overall area of houses by calculating the area of the shapes that form them.

Students identify the skills they will need to apply in order to be effective in making the best use of the area available on a block of land when creating floor plans for homes.

Students list these skills so that they can identify whether they are identified as part of the requirements for roles in the construction industry.

DURING THE VISIT

While at the CFC students investigate information on home design and the way that home designers make the best use of space available.

Students examine further the shapes used in the building of a house, confirming or adding to the lists they prepared prior to their visit.

Students discuss and give reasons why particular shapes are preferred in the construction of homes.

Students identify roles in the construction industry that apply the skills they have been learning about and applying to create floor plans. Students list these roles and identify the training and/or qualifications to be successful in each.

AFTER THE VISIT

Students review what they have learned about the use of shapes in the construction of homes, confirming the most used shapes and the reasons why.

Students are given diagrams of blocks of land of varying shapes and dimensions and challenged to design a house that makes the best use of the area available for construction.

Students draw diagrams of house floor plans and perimeters using composite shapes and calculate the overall area to determine who has made the best use of each block while maintaining a practical design.

Students make note of the skills and dispositions they have been applying in creating floor plans and the associated roles in the construction industry. Students assess their interest in these roles and create pathways showing the learning and experience they will need to be able to acquire such roles when they leave school.

SKILLS RELATED TO THE CONSTRUCTION INDUSTRY

The Construction Futures Centre has identified core skills that relate to careers in the construction industry. As students complete learning experiences before, during and after their visit to the Construction Futures Centre, they should be encouraged to work in ways that enable them to apply and demonstrate these core skills and to identify how these relate to and are applied in roles in the construction industry.

THE CORE SKILLS ARE:

- reading;
- writing;
- speaking;
- listening;
- numeracy;
- technology;
- teamwork; and
- problem solving.

SUGGESTED WEBSITES

www.yourhome.gov.au/you-begin/design-process
www.yourhome.gov.au/you-begin/construction-process
www.buildyourcareer.com.au/
www.ctf.wa.gov.au/careers/
www.aapathways.com.au/



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