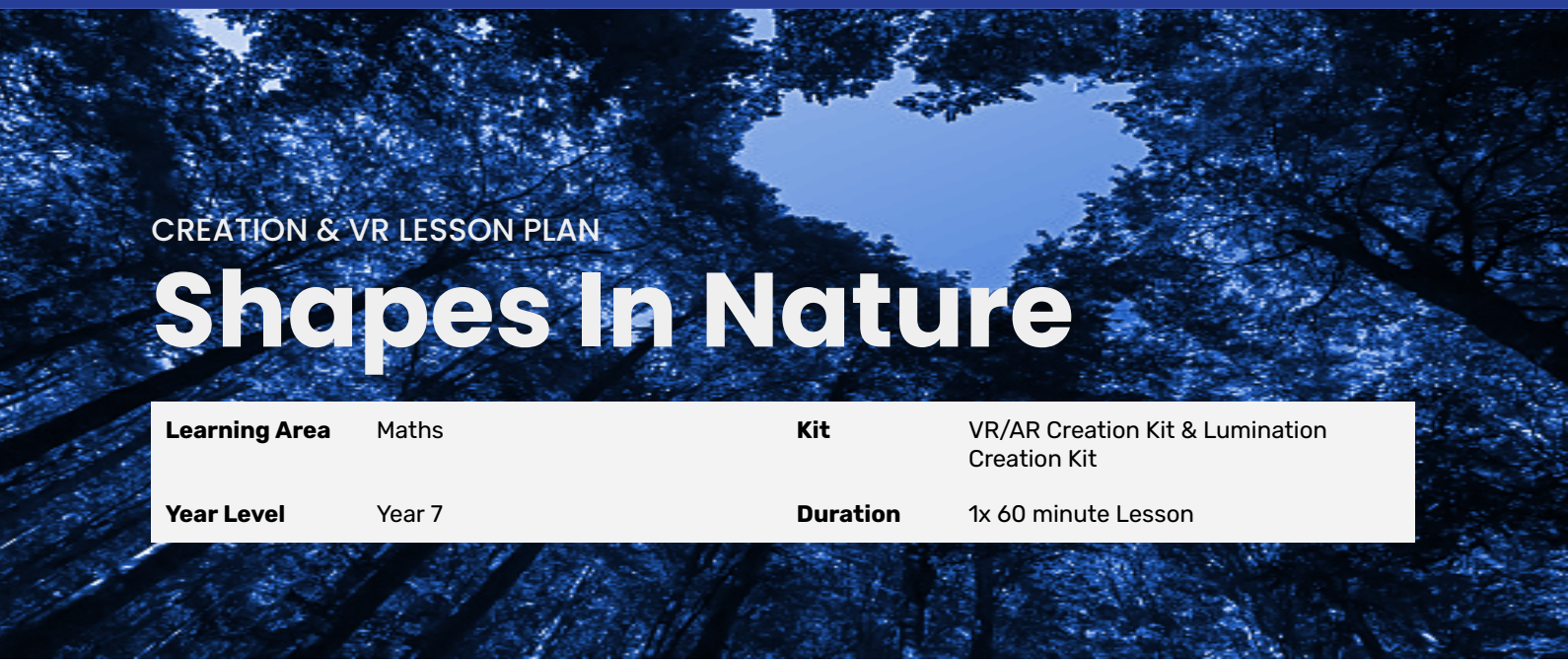
lumination

Lesson Plan



CREATION & VR LESSON PLAN

Shapes In Nature

Learning Area	Maths	**Kit**	VR/AR Creation Kit & Lumination Creation Kit
Year Level	Year 7	**Duration**	1x 60 minute Lesson

Introduction/Description

Shapes occur everywhere in our physical environment, you just need to look for them! Students will find naturally forming shapes in an environment around them and calculate their areas.

Learning Intentions

Students will practice applying their knowledge and understanding of how to find areas of triangles, quadrilaterals, complex shapes, and parallelograms. They may also need to work with some measurement conversions.

Task Summary

Students will measure and find the areas of naturally occurring shapes in an environment around them. They will record their shapes and areas by taking a 360 image using a 360 camera of their area and use thinglink to highlight where the shapes are found in their environment.

Preparation

Students are expected to:

- Have some background in viewing Thinglink creations in VR on the HHVR headsets.
- Have background experience in creating content using Thinglink.
- Have experience in using 360 cameras and capturing 360 images.
- Prior knowledge of calculating areas of triangles, rectangles/squares, complex areas, and parallelograms.
- Have prior knowledge on how to screen snip/ screenshot using the PCs screen snipping tool

Teachers should make sure that:

- Devices are charged.
- 360 cameras are charged.
- Students have already made student/ education accounts with Thinglink, or the school has a subscription and an invite code.
- Students are divided into pairs or groups depending on how many

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devices are available.
- Slide deck has been checked and the teacher has enabled the deck's accessibility so students can access them.

Resources

- Hardware
  - Student laptops
  - Handheld Virtual Reality (HHVR) Headsets
  - Mobile Devices
  - 360 cameras
  - Tripods
  - 360 camera transfer cables

- Websites
  - Geo Tombs
    Explore the depths of ten different tombs in one of our most beloved area and perimeter games online. Find keys and then open chests that show the correct perimeter or area. You can choose to learn about squares, rectangles, triangles, trapezoids, or rhombuses. Be careful though, mummies and scorpions lurk everywhere. Better keep plenty of dynamite ready.

- Videos:
  - Shapes in Nature (1.05)

- Other:
  - Student's maths books
  - Measuring tapes/ metre rulers/ trundle wheels/ rulers
  - Writing implement

- Software
  - Screen snipping tool (snipping tool on PC)
- Teaching Materials:
  - Shapes in Nature Teaching Deck (slide deck)
  - Thinglink
  - Shapes in Nature Thinglink Example

Other Learning Areas

- Digital Technologies

Learning Sequence

1 Introduction (10 mins)

- Begin by asking students to refresh their knowledge on areas by playing the following area game - Geo Tombs- on their laptops.
  - *Choose either keyboard or touch screen*
  - *Choose 'area' option*
  - *Select the square, rectangle, triangle, and parallelogram area options (or whatever shapes the students have been learning about)*

2 Development (45-50 mins)

- Ask students to look around them and list what shapes they can see.
- Watch the Shapes in Nature (1.05) video to show how different shapes can be found in nature.
- Direct students in pairs or groups of three to find a space around the school (a classroom, the play equipment, a garden etc) where they can find shapes in nature - particularly triangles, squares, rectangles, parallelograms, and complex shapes.
- Students are to take a 360 image of their chosen space using the 360 camera
- Direct students that they are to find the following shapes in their environment, measure their areas and record them in their maths books;
  - 3 triangles
  - 2 squares or rectangles
  - 1 parallelogram
  - 1 complex shape

  NB This can be adapted depending on what areas students have been taught.
- Students are to return to the classroom once this has been completed and view the Shapes in Nature Thinglink Example to see what is expected of them
  - Students are to input their 360 images into Thinglink by creating a new 360 image or tour
  - Students are to use a screen snipping tool (snipping tool on PC) to screen snip the shapes they identified in their area from the 360 image. They are then to add a node on the 360 image and a text box with their working out of the area and the image of the shape either outlined or highlighted.

3 Conclusion (5 mins)

- Students share their Thinglinks with each other, viewing their creations in VR via QR codes.

Additional Teaching Notes

This lesson can be used during a unit to consolidate and practice area formulas and problem solving using them (in establishing complex shape areas).

Modifications

Adaptations

Students may only look for and measure specific shapes as determined by the teacher.

Students may only measure the perimeter of shapes found.

Students may take a regular image rather than a 360 one and still complete a Thinglink using this image.

Extension Ideas

Students may measure other shape areas or more complex shapes

Curriculum Connections

Australian Curriculum	NSW Curriculum	VIC Curriculum
Year 7 - Mathematics Establish the formulas for areas of rectangles, triangles and parallelograms, and use these in problem-solving (ACMMG159)	Year 7 - Mathematics **MA4-13MG** uses formulas to calculate the areas of quadrilaterals and circles, and converts between units of area	Level 7 - Mathematics Establish the formulas for areas of rectangles, triangles and parallelograms and use these in problem solving **VCMMG258**

Year 7-8 - Digital Technologies	Stage 4 - Digital Technologies	Levels 7 & 8 - Digital Technologies
Design the user experience of a digital system, generating, evaluating and communicating alternative designs (ACTDIP028)	**TE4-7DI** explains how data is represented in digital systems and transmitted in networks **TE4-1DP** designs, communicates and evaluates innovative ideas and creative solutions to authentic problems or opportunities	Design the user experience of a digital system, generating, evaluating and communicating alternative designs **VCDTCD041**

Cross-Curriculum Priorities

- Aboriginal and Torres Strait Islander Histories and Cultures
- Asia and Australia's Engagement with Asia
- Sustainability

Capabilities

- Literacy
- ✅Numeracy
- ✅ ICT Capability
- ✅ Critical and Creative Thinking
- Personal & Social Capability
- Ethical Understanding
- Intercultural Understanding