



Makes Maths Fun

Level 6

3D SPACE

Bloomsmath is a comprehensive mathematics program which provides a fun way for every student to be learning to the best of their ability.

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3D Space

Level 6 is designed for students in their sixth year at school often called Year 5. Students will identify three-dimensional objects on the basis of their properties and visualise, sketch and construct the given drawings of different views.

Knowledge: Students will complete the table of 3D shapes and their component parts.



Students who demonstrate proficiency in this activity move on to Comprehension.



Students stop here as they require additional teacher support to master this activity.

Comprehension: Students will combine 3 or more 3D objects to make a new "pet".



Students who demonstrate proficiency in this activity move on to Application.



Students stop here if time has run out or they require additional support with this activity.

Application: Students will sketch their new pet from 4 different perspectives - front, side, back and aerial view.



Students who demonstrate proficiency in this activity move on to Analysis.



Students stop here if time has run out or they require additional support with this activity.

Analysis: Students will use their pet's geometric properties to give it personality.



Students who demonstrate proficiency in this activity move on to Synthesis.



Students stop here if time has run out or they require additional support with this activity.

Synthesis: Students will create appropriate housing, transport and car safety devices for their pet.

Evaluation: Suggested questions provide a starting point for discussions related to 3D Space.



Students may complete more or fewer activities for each learning outcome depending on the time allocated and their strength in the area being covered.



All students should participate in the Evaluation discussion to encourage the use of mathematical language, logical reasoning and reflection on that which they have completed.

Name: _____

Knowledge

Fill in the missing information below and then sketch each 3D shape.

Shape	Faces	Edges	Vertices	3D Shape
Cube				
Square Based Pyramid				
Hexagonal Prism				
Cylinder				
Sphere				

3D Space - Level 6 - Students will identify, sketch and construct multiple 3D objects.

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation



Let's Try This Again

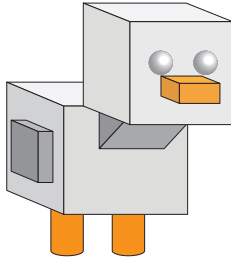


Progress To Comprehension

Name: _____

Comprehension

Combine 3 or more 3D objects to make a new "pet".



As an example this "pet" has used 2 cylinders, 2 cubes, 3 rectangular prisms, a triangular prism, and 2 spheres.

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation

3D Space - Level 6 - Students will identify, sketch and construct multiple 3D objects.



Let's Try This Again

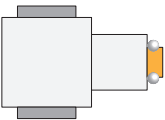


Progress To Application

Name: _____

Application

Using the pet you made in the comprehension section sketch it from 4 different perspective.

 <i>Front View</i>	 <i>Side View</i>
 <i>Back View</i>	 <i>Aerial View</i>

3D Space - Level 6 - Students will identify, sketch and construct multiple 3D objects.

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation



Let's Try This Again

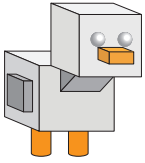


Progress To Analysis

Name: _____

Analysis

Use your pet's geometric properties to give it 10 personality traits. You must justify each trait.



I.e. My pet can fly because it has wings or my pet has trouble letting me know how it is feeling because it has no eyebrows.

	Pet Trait	Justification
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

3D Space - Level 6 - Students will identify, sketch and construct multiple 3D objects.

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation



Let's Try This Again



Progress To Synthesis

Name: _____

Synthesis

Now your new pet has personality you will love them even more so you have to think about keeping them safe and healthy. In the space below design appropriate housing, transport and car safety devices for your pet.

I.e. For my pet the housing would be a square box so it can fit cozily, curl it's legs up under itself and soft padding on the side to rest its head.

Housing

Transport Device including Car Safety

3D Space - Level 6 - Students will identify, sketch and construct multiple 3D objects.

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation



Let's Try This Again



Progress To Evaluation

Evaluation

The following questions and activities are provide as a starting point for fun discussions related to 3D Space. During these conversations students will have an opportunity to use appropriate mathematical language in its correct context, to engage in reflection on the 3D Space activities they have completed and to use logical reasoning to tie their in-class mathematics to its everyday context.



Have a number of 3D shapes in a bag and see how few clues students need to guess your shape. Which shapes are easier to guess than others?



List all the different 3D shapes students can think of and foods which come in these shapes.



How did the shapes each student chose affect their pet's design?



How did the shapes each student chose affect their pet's personality?



How did the shapes each student chose affect their pet's bedding and transport?



What elements made some pets look cute, scary, tough or ugly as chosen by the student's design? Do certain shapes such as large spherical eyes convey cuteness more than small triangular pyramid eyes?

