Ready-Ed Publications

mini e-book

PHOTOCOPY MASTERS

Maths

3D Shapes

For Upper Primary

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mini e-book

PHOTOCOPY MASTERS

Contents

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Prisms Around Us

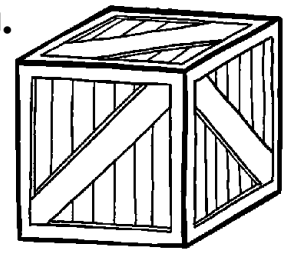
Prisms are everywhere - from the pyramids of Egypt and China, to packets on supermarket shelves.

- Match the list of prisms/pyramids (below) with the images, then complete the missing information about the features of each one.

LIST OF PRISMS/PYRAMIDS

hexagonal prism triangular prism octagonal prism pentagonal prism
square-based pyramid cuboid square prism hexagonal pyramid

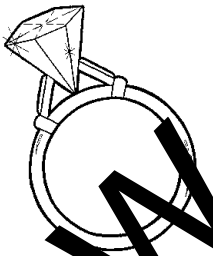
a.



TYPE:_____

faces:	
vertices:	8
edges:	

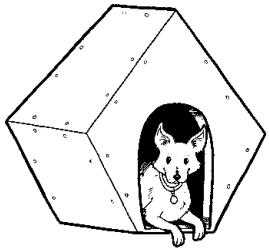
b.



TYPE:_____

faces:	7
vertices:	
edges:	

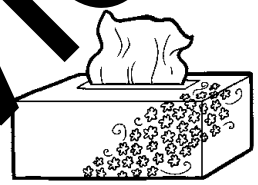
c.



TYPE:_____

faces:	6
vertices:	
edges:	

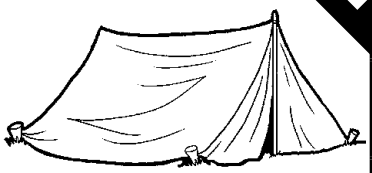
d.



TYPE:_____

faces:	
vertices:	8
edges:	

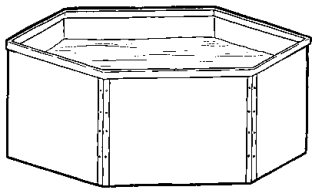
e.



TYPE:_____

faces:	
vertices:	
edges:	9

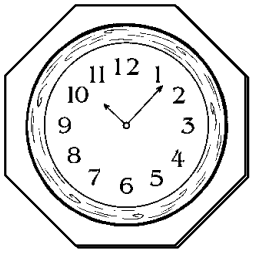
f.



TYPE:_____

faces:	
vertices:	12
edges:	

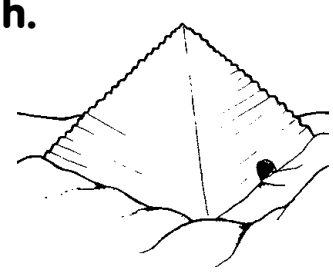
g.



TYPE:_____

faces:	
vertices:	16
edges:	

h.



TYPE:_____

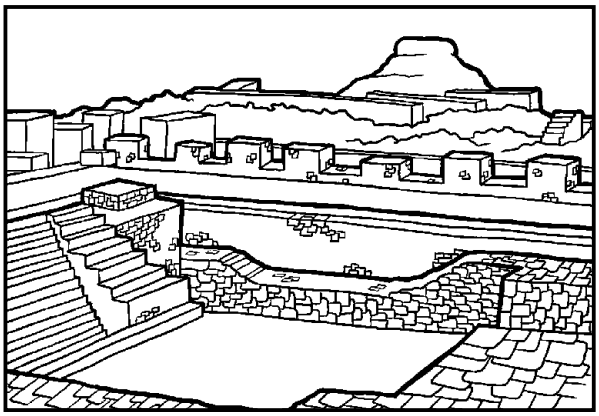
faces:	
vertices:	
edges:	8

Extra! Find a net of one of these 3D prisms or pyramids and construct it. To download a variety of nets online go to: www.korthalsaltes.com/

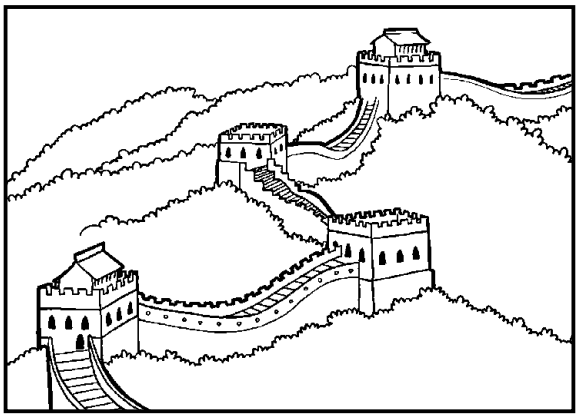
Curriculum Link: Construct simple prisms and pyramids (ACMMG140)

Ancient 3D Shape Constructions

Do your own research to discover remarkable constructions of the ancient world that used 3D shapes. Below are some examples.



MOHENJO DARO, PAKISTAN



GREAT WALL OF CHINA

My Research On An Ancient Construction

Name:	Date:
Location:	
Shape and dimensions of the construction:	Construction's purpose:
Building materials:	
Sketch or image:	Other interesting information:

Curriculum Link: Construct simple prisms and pyramids (ACMMG140)
Elaboration: Considering the history and significance of pyramids from a range of cultural perspectives including those structures found in China, Korea and Indonesia.

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Build A 3D Shape House 1

- **In small groups, try your hand at building a model of this house out of 3D shapes. Study the floor plan below first, then follow the instructions on the next page.**

Build A 3D Shape House 2

Decide how to divide the floor plan on page 43 into 3D modules using prisms in order to build your model.

1. How will the group divide the house into modules? Mark the divisions with a ruler in a different colour on the floor plan on page 43.
2. This floor plan has been drawn to scale. Mark the dimensions of your modules on the floor plan to help you visualise the size of the nets you need to make.
3. Sketch and label the 3D prisms and pyramids that you need to construct your modules.

4. Which 3D shape/s will you need to build the roof of the house? Remember that the roof line will extend beyond the walls of the house. Sketch your roof.

5. 3D nets we need:

Materials we need:

Curriculum Link: Construct simple prisms and pyramids (ACMMG140)

Answers

Page 3
a.square prism: faces 6, edges 12
b.hexagonal pyramid: vertices 7, edges 12 **c.**pentagonal prism: vertices 10, edges 15 **d.**cuboid: faces 6, edges 12
e.triangular prism: faces 5, vertices 6 **f.**hexagonal prism: faces 8, edges 18
g.octagonal prism: faces 10, edges 24 **h.**square-based pyramid: faces 5, vertices 5

Page 4
Students' own research.

Page 5-6
The floor plan acts as a springboard for students to improvise and change the dimensions as they see fit. It is a basic design made up of three cuboids and a triangular prism. The roof could be constructed from a larger triangular prism or one or two square-based pyramids (extending to include the carport roof and the covered patio).