Understanding Proportional Relationships in Enlargements

Introduction to Proportional Relationships

Read the following introduction and answer the questions that follow:

Proportional relationships in enlargements are a fundamental concept in mathematics that helps us understand how shapes change when they are enlarged. In this welcome pack, we will explore the concept of proportional relationships in enlargements and provide engaging and interactive activities to help you learn and apply this concept.

1. What is the main concept explored in this welcome pack?

2. Why are proportional relationships in enlargements important in mathematics?

Key Concepts

Match the following key concepts with their definitions:

Concept	Definition
Scale Factor	The ratio of the corresponding sides of two similar shapes.
Enlargement	A transformation that changes the size of a shape, but not its shape.
Similar Shapes	Shapes that have the same shape, but not necessarily the same size.

Scale Model Design

Design a scale model of a real-world structure, such as a building or a bridge, using proportional relationships in enlargements.

Group Task:

1. Choose a real-world structure to model
2. Determine the scale factor for your model
3. Calculate the dimensions of your model using proportional relationships

[Space for design and calculations]

Proportional Relationships Worksheet

Complete the following worksheet with problems related to proportional relationships in enlargements:

Problem	Solution
If a rectangle is enlarged by a scale factor of 2, what happens to its area?	
A map has a scale of 1:100. If a building is 50 meters tall in real life, how tall is it on the map?	

Real-World Application Project

Research and present a real-world example of how proportional relationships in enlargements are used in a particular field, such as architecture, engineering, or graphic design.

Group Task:

1. Choose a field to research
2. Find a real-world example of proportional relationships in enlargements in that field
3. Present your findings in a short report or presentation

[Space for research and presentation]

Conclusion and Reflection

Reflect on what you have learned about proportional relationships in enlargements and how you can apply it in real-world situations.

Individual Reflection:

1. What did you learn about proportional relationships in enlargements?

2. How can you apply proportional relationships in enlargements in real-world situations?