S.T.E.A.M.

Origami Handbook

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Name:

Date:

Activity 1 - Basic Pleats

Draw a sketch of the basic pleat you made.

Answer the questions below about your basic pleat.

Can it bend and move freely? How?

Could the ends be joined to each other? How?

Could it be joined to another basic pleat? How?

Is it stable? Can it stand on its own? Explain.

Can it be folded into a smaller size for storage or transportation?

Activity 2 - V-Pleats

Draw a sketch of the v-pleat you made.

Answer the questions below about your v-pleat.

Can it bend and move freely? How?

Could the ends be joined to each other? How?

Could it be joined to another v-pleat? How?

Is it stable? Can it stand on its own? Explain.

Can it be folded to a smaller size for storage or transportation?

Activity 3 - Parabolic Design

Draw a sketch of the parabolic design you made.

Answer the questions below about your parabolic design.

Can it bend and move freely? How?

Could the ends be joined to each other? How?

Could it be joined to another parabolic design? How?

Is it stable? Can it stand on its own? Explain.

Can it be folded to a smaller size for storage or transportation?

Origami Skills Reflection

Think about the origami folds that you tried and answer the following questions.

How do you feel about your ability to complete origami folds?

What elements of the origami folding were challenging?

Can you see how paper folding techniques could be useful in designing products which reduce to a smaller size for storage or transport? Explain.

Do you think these kinds of techniques could be useful when developing new and interesting designs for architecture? Explain.

Paper Folding Design Challenge

Design Brief

Overview

The concept of S.T.E.A.M. recognises that science, technology, engineering, art and mathematics are all interconnected, and that many design challenges we face require us to apply skills from all of these areas.

Your challenge is to apply a range of skills from within these areas to create a prototype for an innovative architectural design.

Youv may selct one of the following to design:

A shelter for a park barbeque area.	An amphitheatre.
A covered eating area for a school.	A covered walkway between buildings.
An enclosed car bridge.	An outdoor, sheltered bicycle storage area for a schools or business.

Design Requirements

1. Your design should include the use of paper folding techniques. As well as techniques learnt in the previous activity, you are welcome to explore additional techniques.

2. Your design should show appreciation of the purpose and context of the structure.

3. Your design should show consideration of the elements and principles of art and design.

4. You will need to explain the scale of your design (i.e. how the size of your prototype compares to the realistic size).

5. While your prototype will be developed using craft materials, you will need to be able to explain what materials would be used in a full scale construction.

Your design should be presented as a scale model using the resources provided by your teacher. It should be accompanied by the Design Summary sheet (provided on the next page) to explain the thinking that went into the design.

Design Summary

The purpose of my design is ...

I have used the following paper folding techniques ...

I have though about the following elements and principles of art and design ...

Art/Design Elements

Line	Shape	Colour
Value	Form	Texture
	Space	

Art/Design Elements

Balance	Contrast	Emphasis
Movement	Pattern	Rhythm
	Unity	

This structure will be made from ...

Reflection

Respond to the following questions to reflect on your progress throughout the lesson.

Do you have a clear design idea in mind? Explain.

Have you begun to develop your prototype? What stage are you up to?

What do you feel has gone well so far?

What challenges are you facing? What steps can you take to overcome these challenges?

What resources do you require to complete the Design Challenge?

How much time do you predict you will need to complete the challenge?