#EtharaAtHome Portfolio

TIPS AND HINTS

This is a guide to help you complete your portfolio. View the online content on the Yas in Schools support website to help you complete your portfolio.

Core Activities

Slides / Pages 1 -7 should be completed and submitted through the ADNOC STEM for Life Portal.

Extension Activities

You don't have to work through all the optional extension activities in order to complete the course. If you don't have time for those, just delete the pages from your portfolio before you submit.

YOUR NAME *SCHOOL* *GRADE* *CLASS*

CHOOSE TEAM NAME AND TEAM COLOURS

On this slide you will decide on your team name and choose colors for your team identity that match your chosen team name

1. Write three team name options using ideas from your mind map. Ask family or friends what they think of your ideas

2. Decide your Team Name and type it here

3. Explain here why you chose this team name

4. Fill these boxes with your chosen team colours. The colours should match your team name and look good together

5. Explain here why you chose these team colours

TEAM NAME & COLOUR IDENTITY

Team Name Ideas: 1. *[TYPE HERE]* 2. *[TYPE HERE]* 3. *[TYPE HERE]*

My Team Name

[TYPE YOUR CHOSEN TEAM NAME HERE]

Team Name Justification

[IN THIS SPACE, WRITE A FEW SENTENCES THAT EXPLAIN WHY YOU CHOSE THIS TEAM NAME AND THE MEANING BEHIND IT]

My Team Colours

Colour Justification

[IN THIS SPACE, WRITE A FEW SENTENCES THAT EXPLAIN WHY YOUR CHOSE THESE COLOURS. HOW DO THESE COLOURS SUPPORT & STRENGTHEN YOUR TEAM NAME?]

TEAM BRAND

On this slide in your portfolio you will present your overall team brand by displaying your final team logo, team name and team colours all on one page. You also then need to write a short evaluation of the work you have done

1. Add your final team logo here. Make it as big as possible inside this square. It could be a photo of your logo drawn by hand on separate paper, or created using PowerPoint graphics tools

2. Type your team name here. Use a large font size

3. Add your team colours in these squares

4. Write your evaluation. Read the tips and then type over in this box.

MY TEAM BRAND

TEAM LOGO

TEAM NAME

[TYPE YOUR TEAM NAME HERE]

TEAM COLOURS

EVALUATION

[IN THIS SPACE WRITE AN EVALUATION OF YOUR COMPLETE TEAM BRAND. HERE ARE SOME THINGS YOU COULD TALK ABOUT:

- *WHAT DO YOU THINK ARE THE STRENGTHS?*
- *MENTION HOW YOU THINK THE NAME, COLOURS AND LOGO COMPLIMENT / MATCH EACH OTHER.*
- *WHAT ARE THE MAIN THEMES / FEELINGS THAT YOUR TEAM BRAND STAND FOR?*
- *IS THERE ANYTHING YOU COULD IMPROVE IF YOU HAD MORE TIME OR BETTER DESIGN TOOLS?]*

TEAM UNIFORM - SHIRT

Now that you have your team brand organized you could start designing team uniform items. On this page in the portfolio, create a team shirt design. You could also create a team hat design using the page in the extension activities. Think about important features on the uniform and remember to keep it clean and simple.

Features:

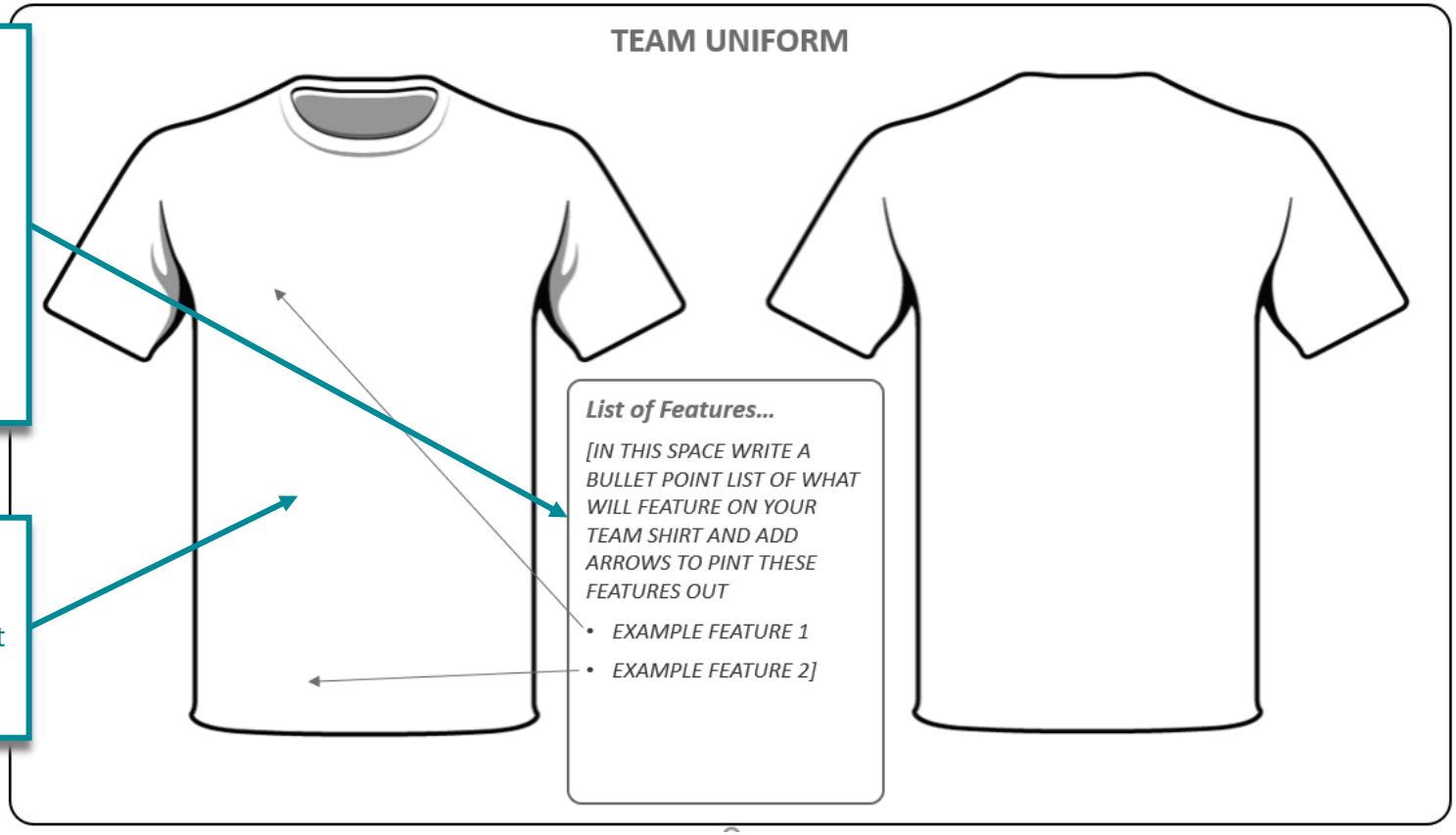
Think about important graphical features to include on your team shirt, e.g.

- Team Name
- Logo

Write your list of important features in the central text box and use arrows to point to each feature

2. Add Your Design:

Show your proposed team shirt design by adding features to our shirt templates or find your own template to paste on the slide.



ETHARA SCIENCE AND MATH

On this page of the portfolio, you need to record your findings from having watched videos and read all the online information in Unit 6 – Ethara Science and Math. In Unit 6 there are links to help you learn more about the various science of motion principles that are active during a Formula Ethara Car race. You will also need to conduct your own online research about the famous scientist, Sir Isaac Newton.

Facts & Figures

Simply list in this table the various facts and figures. All of the answers can be found in the Ethara Race Video in Unit 5

Laws of Motion

You need to conduct your own research to learn more so that you can fill the words that are missing from the story in this box

Science Related to Racing

Under each of the 5 headings you need to briefly describe how each of the science of motion principles has an affect on a Formula Ethara car during a race.

ETHARA SCIENCE AND MATH

Race Facts & Figures	
Race Distance	
Number of Races per Team	
Type of Gas inside Canister	
Weight of Gas inside Canister	
Length of Gas Canister	

Discovering the Laws of Motion

Sir Isaac _____ was one of the great minds of the ____ Century. He lived in _____. As a physicist, he was most famous for his three laws of _____. Legend has it that Newton got the idea for _____ when he saw an _____ fall from a tree. Newtons _____ law of motion states that for every _____ there is an _____ and _____ _____.

The Science of a Formula Ethara Race

Forces
[Explain how this might affect a car racing on the track]

Acceleration
[Explain how this might affect a car racing on the track]

Thrust
[Explain how this might affect a car racing on the track]

Aerodynamics
[Explain how this might affect a car racing on the track]

Friction
[Explain how this might affect a car racing on the track]

ETHARA SCIENCE AND MATH

This page of the Portfolio is focused on Math related to Formula Ethara Racing. The first thing you need to do is visit the Reaction Time test website and record at least 6 of your own test results. You will also need to ensure you have a good understanding of how to calculate the average speed of an object. All the information you need to learn about the Math skills required to complete this page are included in the online Unit 6 content

Record Data

Record 6 of your reaction time results here

Race Times & Total Time

We have given 4 race times. You now calculate the missing Total times. Check you know the difference between Race Time and Total Time. 2 Race Times missing that you need to calculate

Calculate Averages

Fill these two rows to calculate the average value in each column

Summary Table

Look over your Data Records and fill this table

ETHARA SCIENCE AND MATH

DATA RECORDS	REACTION Time	RACE Time	TOTAL Time
Race 1		1.454	
Race 2		1.398	
Race 3		1.421	
Race 4		1.457	
Race 5			1.757
Race 6			1.545
Totals			
Averages			

Data Summary Table	
My Average REACTION Time	
My Fastest REACTION Time	
Fastest TOTAL Time	
Average TOTAL Time	
Fastest RACE Time	

My Fastest Theoretic TOTAL Race Time:

Average Speed (m/s)

Average Speed (km/h)

In Theory – How long would it take a Formula Ethara Car to complete a F1 Grand Prix at Yas Marina Circuit?

Test Your Knowledge

Refer to your data summary table and knowledge of the formula for calculating average speed to help you answer these three problems. Show all your working out in the space provided

SHOWCASE – MY COMPLETED CAR

On this page of the portfolio, you get to showcase you finished #EtharaAtHome car. Add one of or more photos from different angles. Be creative with how you showcase your car here. Maybe include your team name and / or team slogan. Possibly you could create a simple diorama to place your car in for the photo. Maybe you know how to superimpose a green screen photo of your car onto a scenic background. Get creative and showcase your cool #EtharaAtHome car here!

MAKE – MY COMPLETED CAR!

[IN THIS SPACE INSERT A PHOTO OF YOUR COMPLETED CAR. YOU COULD EVEN THINK TRYING TO SUPERIMPOSE YOUR PHOTO ON A BACKGROUND IMAGE OR PLACE SOME OTHER DECORATIVE ITEMS AROUND YOUR CAR LIKE A SIMPLE DIORAMA SCENE FOR YOUR PHOTO]

#EtharaAtHome Portfolio

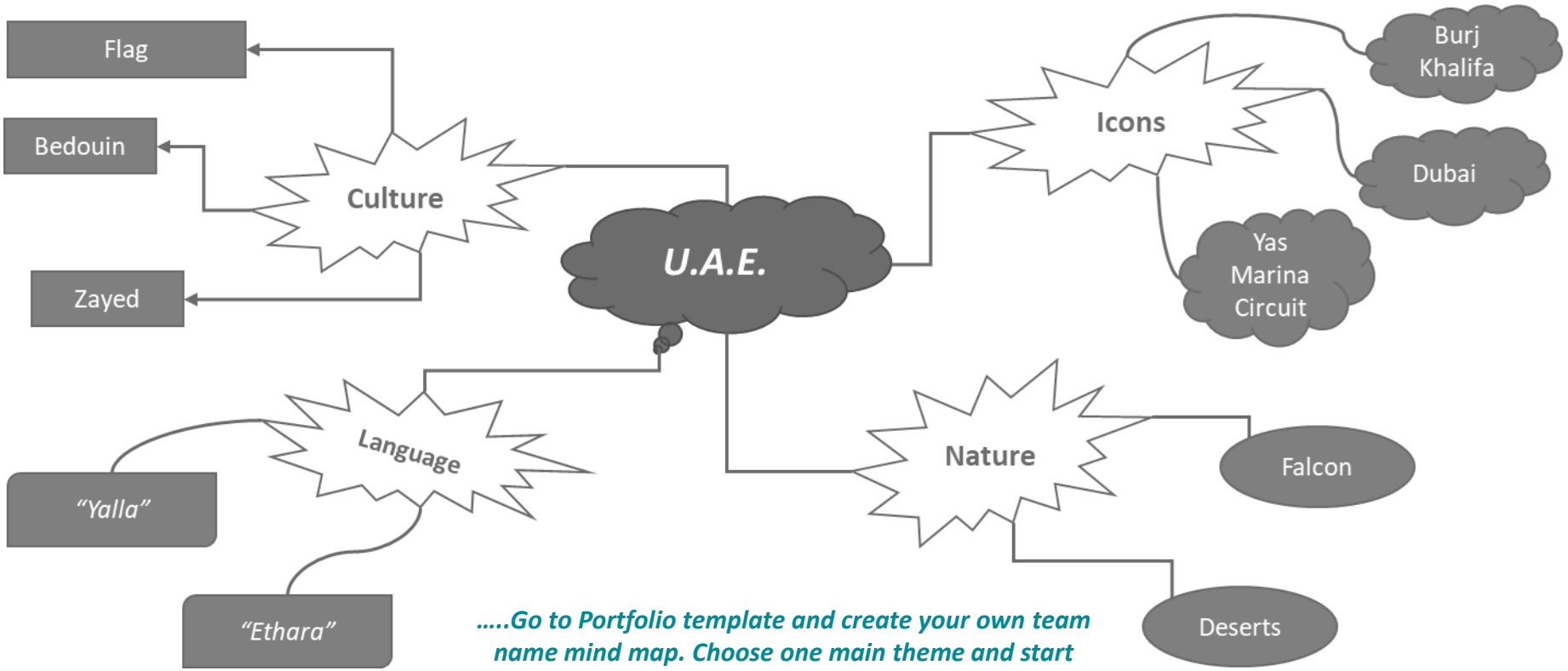
EXTENSION ACTIVITIES

The following pages are tips and hints for completing the optional extension activities. Add extension activities pages to your final portfolio before submitting. Delete any extension activity pages not completed.

YOUR NAME *SCHOOL* *GRADE* *CLASS*

MIND MAPPING

Mind maps are a great tool for helping brainstorm and generate ideas. Use words to start with a central idea / theme and then branch out with related ideas. Here is an example with the main theme as the United Arab Emirates…



…..Go to Portfolio template and create your own team name mind map. Choose one main theme and start form there… You can add, delete or change shapes and colours on the diagram

TEAM LOGO IDEAS

On this slide you will create three different team logo ideas and analyse each idea using the Positive, Minus, Interesting (P.M.I) method.

1. Show your team logo design ideas in each of these three boxes. Sketch your ideas by hand on separate sheets of paper, take a photo and then paste the photo here.

2. Use the PMI method to analyse each idea using the table underneath. You could ask family or friends for their opinions.

P = POSITIVE – List 2 or 3 things you feel are positive points about the design idea.

M = MINUS – List 2 or 3 things you feel aren't so great about the idea.

I = INTERESTING – These are thoughts you have about the idea that either Positive or Minus

TEAM LOGO IDEAS

Logo Idea 1	*Logo Idea 2*	*Logo Idea 3*

	Idea 1 Analysis	*Idea 2 Analysis*	*Idea 3 Analysis*
P	*[TYPE HERE]* *[TYPE HERE]* *[TYPE HERE]*	*[TYPE HERE]* *[TYPE HERE]* *[TYPE HERE]*	*[TYPE HERE]* *[TYPE HERE]* *[TYPE HERE]*
M	*[TYPE HERE]* *[TYPE HERE]* *[TYPE HERE]*	*[TYPE HERE]* *[TYPE HERE]* *[TYPE HERE]*	*[TYPE HERE]* *[TYPE HERE]* *[TYPE HERE]*
I	*[TYPE HERE]* *[TYPE HERE]* *[TYPE HERE]*	*[TYPE HERE]* *[TYPE HERE]* *[TYPE HERE]*	*[TYPE HERE]* *[TYPE HERE]* *[TYPE HERE]*

…Now complete steps 1 & 2 using the next slide template…

TEAM UNIFORM - CAP

Test your PowerPoint graphics skills to create a mock-up of your team cap. We have placed some examples on the template which you can delete of modify. If you need help to learn how to create a feature, just type your question into 'google' for example, 'How to curve text using PowerPoint'. On right side of the slide, write up about research you did about local businesses that could produce your uniform items

How to do it:

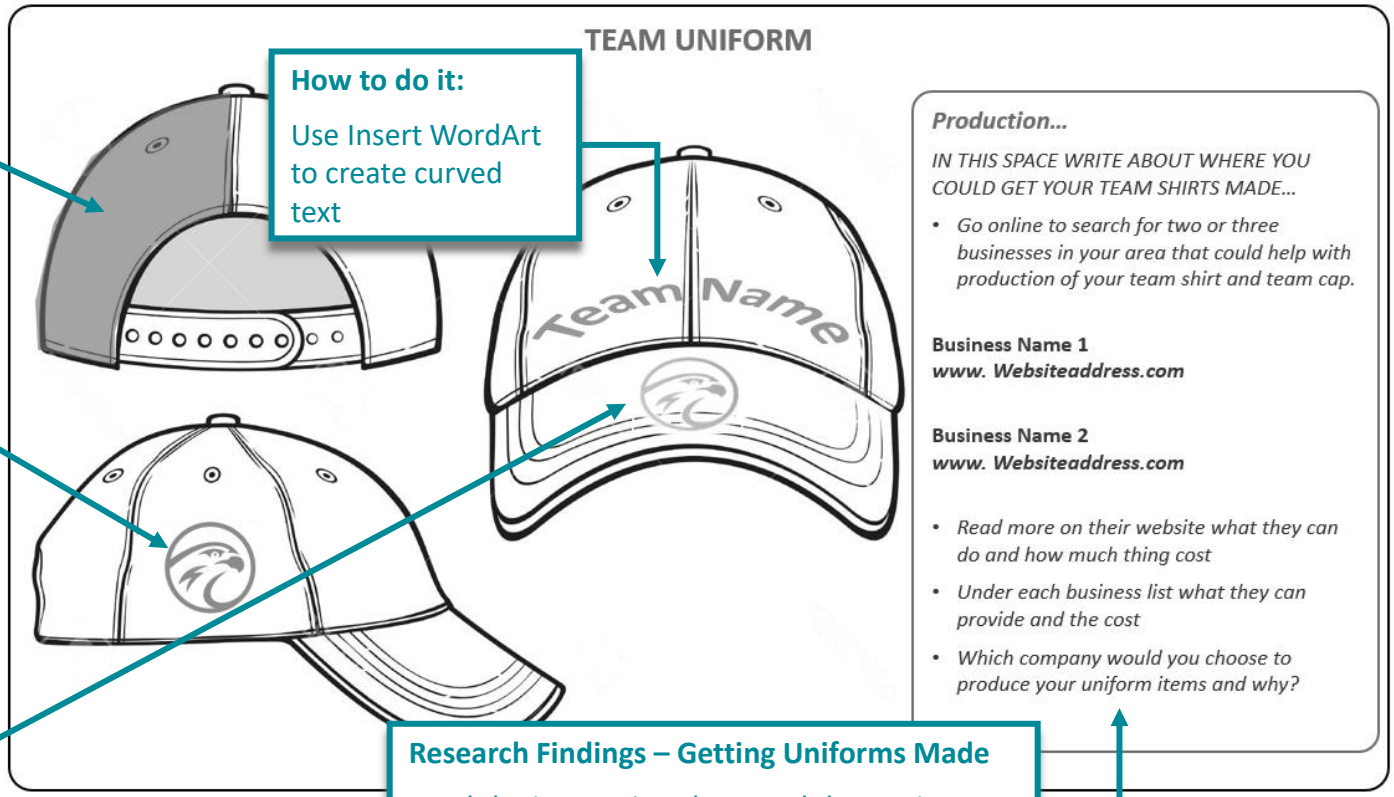
The colour shading on this part of the cap was done by first using menus - INSERT-SHAPE-FREEFORM. Click around the shape you want to colour then play with shape fill, shape outline and fill transparency

How to do it:

Simple copy and paste of logo design and adjust sizing

How to do it:

Paste logo. Right Click and choose Format Picture. Play the advanced 3D format tools to distort the logo look like its sitting down flat on the brim of the cap



How to do it:

Use Insert WordArt to create curved text

Research Findings – Getting Uniforms Made

Read the instructions here and then write about businesses you found that could produce your team uniform items

PRESENT YOUR CAR BODY GRAPHIC DESIGN IDEAS

Present 2 different ideas for your Car Body Graphic design using the slide shown below in the template Portfolio. There are 2 methods you could use to generate and then present the ideas:

1. ***Print out 2 copies of the PowerPoint car body parts template and hand sketch your ideas. Take photos of your sketches and then paste into your portfolio, or***
2. ***Create your design ideas using PowerPoint itself. Take screenshots of the ideas and paste into your portfolio***

Paste photos of your hand sketches here or paste a screenshot from ideas work if you used PowerPoint or another digital drawing method

…next, use the PMI method to analyse each idea. Ask friends of family what they think about your ideas

CAR BODY DESIGN IDEAS

IDEA 1

Positive	Minus	Interesting
• [TYPE YOUR TEXT HERE]	• [TYPE YOUR TEXT HERE]	• [TYPE YOUR TEXT HERE]

IDEA 2

Positive	Minus	Interesting
• [TYPE YOUR TEXT HERE]	• [TYPE YOUR TEXT HERE]	• [TYPE YOUR TEXT HERE]

PRESENT YOUR FINAL CAR BODY GRAPHIC DESIGN

On the slide shown below show a picture of your final car body design concept and justify your choice. Take a screenshot of your final design that you created using the #EtharaAtHome Simple Car Body PowerPoint template.

Show Your Design:

Paste a screenshot of your final design here

Justification:

In this space, justify your final design. Insert arrows to help point out the various features you are talking about

CAR BODY FINAL DESIGN

[DELETE THIS TEXT AND PASTE A SCREEN SHOT OF YOU FINAL CAR BODY DESIGN TEMPLATE HERE]

JUSTIFICATION

[IN THIS SPACE WRITE A SHORT JUSTIFICATION OF WHY YOU HAVE CHOSEN THIS CAR BODY GRAPHIC DESIGN

- *WHAT DO YOU THINK ARE THE STRENGTHS?*
- *WHAT ARE THE MAIN FEATURES – (ADD ARROWS TO POINT THEM OUT*
- *WRITE ABOUT HOW THIS DESIGN MATCHES YOUR OVERALL TEAM BRAND.]*

CAD & CAM AND HOW IT CAN BE USED IN FORMULA ETHARA

Complete this section of the portfolio after you have reviewed all of the information and videos included online in Unit 5 – Ethara CAD CAM
You may might chose to do additional research, including visiting the Silhouette America website to find out more about the Cameo machine.

Find a Picture…

Go online to borrow a good clear picture of a Silhouette Cameo and paste it here. IMPORTANT – Don't forget to add a credit / reference where you got the picture from!

Write a Specification…

Describe what the machine looks like and what it can do. List its basic specifications.

List Advantages…

List what you think are advantages in using CAD & CAM technologies for Formula Ethara

Define Steps…

Write the basic steps in using the Cameo machine to cut out a Formula Ethara Car Body

CAD CAM IN FORMULA ETHARA

The Silhouette Cameo

[Insert picture of machine here]

Description and Specifications

IS SPACE PROVIDE A BRIEF DESCRIPTION OF THE SILHOUETTE EO MACHINE AND LIST SOME OF THE KEY SPECIFICATIONS]

Advantages of Using CAD / CAM for Formula Ethara

[IN THIS SPACE LIST WHAT YOU SEE WOULD BE THE BENEFITS IN USING CAD CAM TECHNOLOGIES FOR THE DESIGN AND MAKING OF A FORMULA ETHAR CAR. HOW WOULD CAD HELP? HOW WOULD CAM HELP?

- *Advantage 1*
- *Advantage 2*
- *Advantage 3]*

How to Cut the Car Body using the Silhouette Cameo

[UNDER THIS HEADING LIST THE BASIC STEPS TO FOLLOW IF YOU WERE GOING TO USE A SILHOUETTE CAMEO MACHINE TO CUT OUT YOUR FROMULA ETHARA CAR BODY PARTS

STEP 1 –
STEP 2 –
STEP 3 -]

RACE @ HOME EXPERIMENT

In this section of the Portfolio you can make a record of the experiment you conducted using your air / balloon powered #EtharaAtHome car. Refer also to the Unit 10 – Race @ Home online information and video. This portfolio page has been presented with a suggested layout. You can present your experiment anyway you like. You can even create your own 'mad scientist video' of you doing the experiment! You can also add an extra page / slide if needed.

Aim:

You need to explain what you want to find out by doing the experiment

Method:

How will the experiment be conducted. What resources and preparation are needed? What are the steps? What factors are important to keep constant? What will be varied or changed in each test of the experiment?

Results:

This is where you record the test results. You could use a table or a graph so that the results are easy to read and analyse

Conclusion:

What have you found out? How does it relate to any scientific theories? Could you improve your experiment method next time?

RACE @ HOME EXPERIMENT

Aim of Experiment:
[IN THIS SPACE EXPLAIN THE AIM OF YOUR EXPERIMNET. IN SUMMARY, WHAT DO YOU HOPE TO DISCOVER OR LEARN?]

Method:
[WRITE UP HOW YOU WILL CONDUCT THE EXPERIMNET. WHATS REQUIRED? WHAT ARE THE STEPS? WHAT ARE TH EIMPORTNAT CONSTANTS? WHAT WILL BE VARIED?]

Results:
[IN THIS SPACE RECORD THE RESULTS FROM EXEPRIMENT. PRESENT THE RESULTS IN A TABLE OR GRAPH. YOU COULD INCLUDE A PHOTO OF THE EXPERIMNET IN PROGRESS]

Example Results Table

Test#	Variable	Avg. Time
1	1 straw	
2	2 straws	
3	3 straws	

Conclusion:
[WHAT HAVE YOU LEARNT FORM THIS EXPERIMENT AND HOW DO YOUR RESULTS RELATE TO EITHER OF NEWTONS LAWS OF MOTION. HOW COULD YOU IMPROVE THE EXPERIMENT IF YOU DID IT AGAIN?]