Winterton EXTREME

Rollercoaster Project
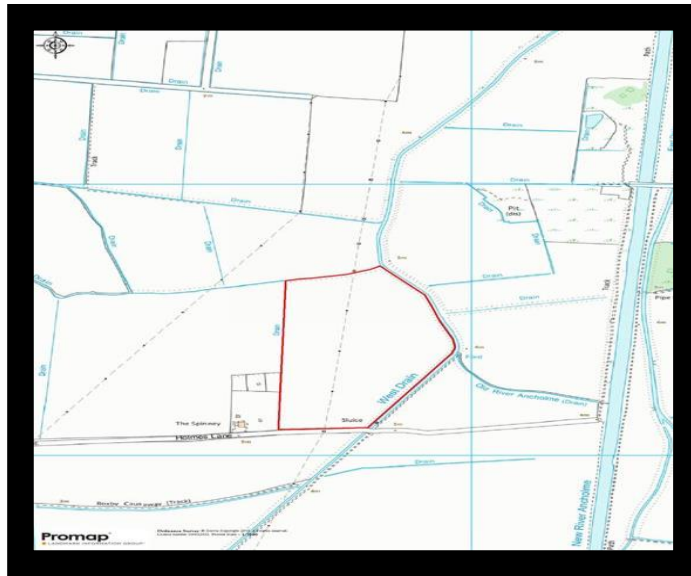
Year 10 Engineering
Home Learning Project

Theme park development

You have been approached by a company to design a theme park that will be built in the village of Winterton. The company (Winterton Extreme) request that you are designing and putting into action a park that will compete with the likes of Alton Towers and Thorpe Park.

Below is the area in which you must work within. (marked within the red area)

Zoomed in area of the space in question. Everything you see within the area will now be demolished and rehouse if necessary, as the company Winterton Extreme has now bought the site.

Lesson 1

- With any new companies that are started, there are a series of things that need to be done and decided on prior to the product being released to the public.

- Throughout this lesson, you will be given various tasks to complete in a specific order. Work through each Activity, and you should be able to present a plan of what you intend to create using the resources provided.

Lesson 1: The Company Logo

- Your company is called Winterton Extreme, but you can call your park whatever you would like (Example, Merlin is the parent company of Alton Towers)

- A logo should <u>represent</u> a company. Less is often more. It is not an advert but a representation of a theme and feel.

Ideas for potential logo

Idea 1

Your logo needs:

- Double line (bubble lettering)
- Colours which represent the theme of your park
- Light pencil work
- A mix of typography and images

Idea 2

Idea 3

Lesson 1

Your final Chosen Logo – Give reasons for your choice

This task should take you 1 hour

Lesson 2

Lesson 2: Park layout

You have been provided with the area in which you need to design your park. What you need to do now is start to allocate your facilities within your park to support the customers coming through the doors. Of course, there will be several rides that need to be inputted, but it is also essential for the amenities to be included.
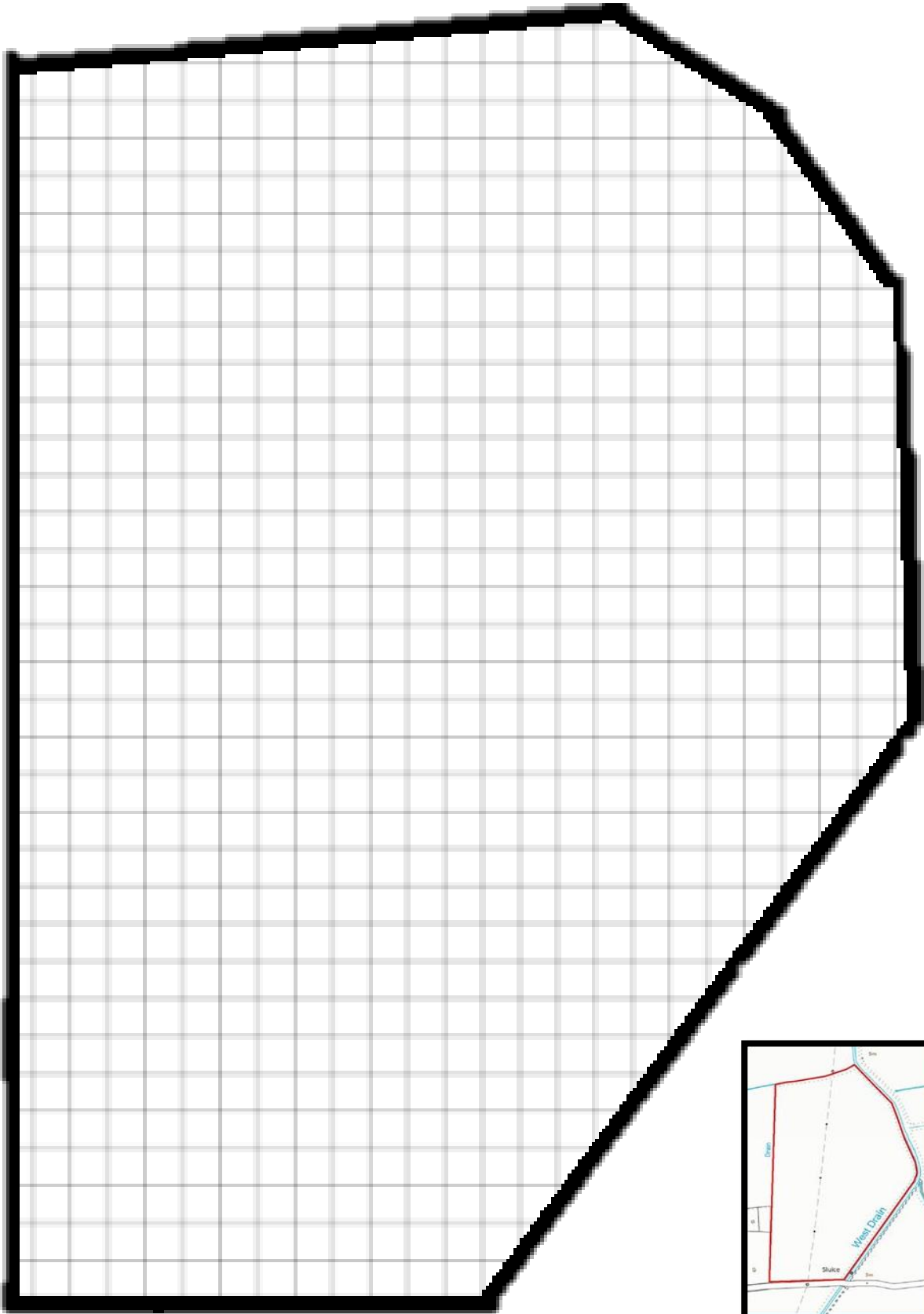
Below are the symbols that you can use to help design your park. The park layout has been included for you to work on.

You must include the following items within your park

- Toilets x 8 blocks of male, female and disabled
- Restaurants x 4
- Gift shop x 2
- Café x 4
- Information centre x 1
- Children's play area x 2
- Facility lock up x 4
- Staff room x 4
- Maintenance x 4
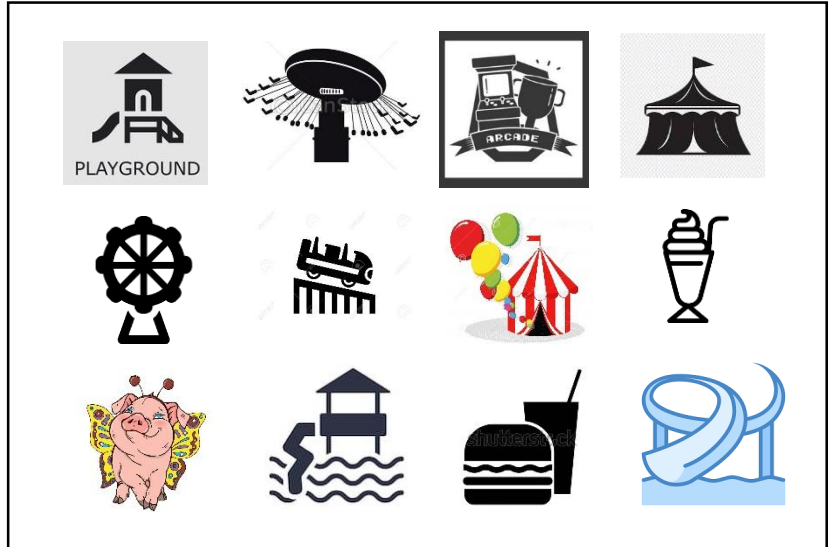- Picnic area
- Baby facilities

Activity 2: Park layout

This task should take you 1 hour

4

Your rides and attractions

Now you have considered the amenities on your site, you now need to include the attractions. To help you do this, symbols below outline the basics of the rides, attractions and stools you could use. Add them to your map.

- Ferris wheel
- Rollercoasters – plan the route
- Arcades
- Water rides
- Activity stalls
- Smaller rides
- Fun fayre
- Dressing up stall
- Park
- Water park
- Drinks stalls
- Fast food stalls

Lesson 3

Main Attraction Ride

Every theme park has a main attraction ride. This is now your job to design the ride that is going to be the talk of the town for your park.

To do this, you will need to construct the following for this Activity

1. Ride name
2. Ride sign
3. The ride design itself
4. Selling point of your ride

Task 1: Name your ride
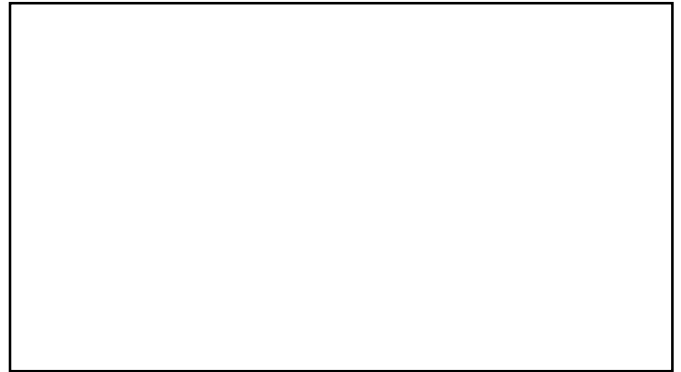
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Describe briefly what the ride is offering. See examples below to see how rides are generated to be an attraction. This can be film related, character related.
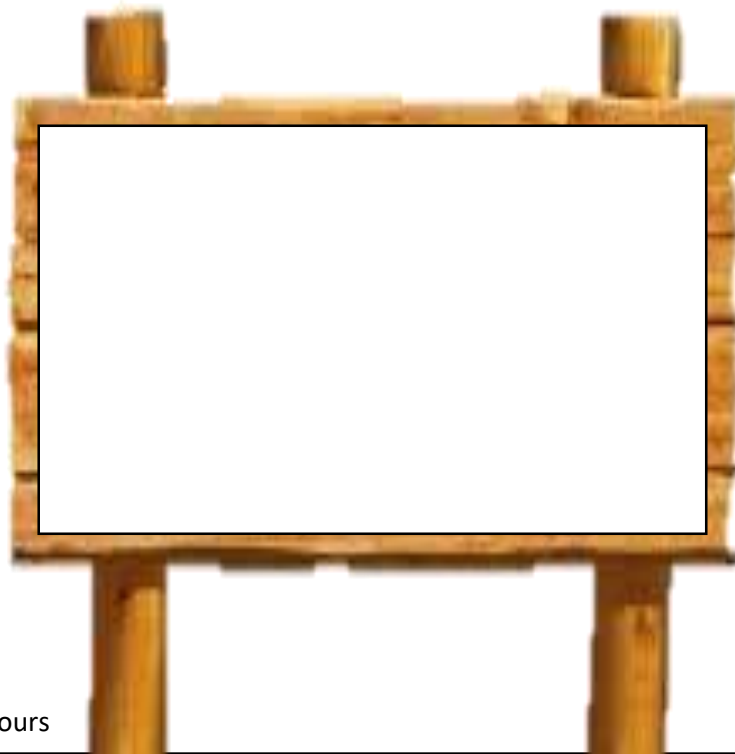

This task should take you 10 mins

Example rides

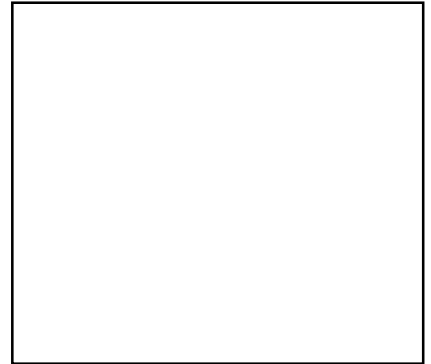Task two: Create three ideas for your sign

Chosen idea

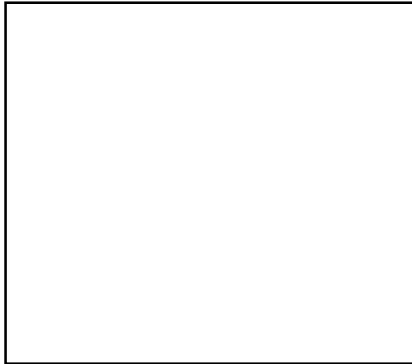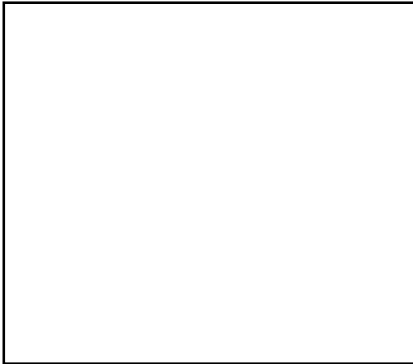**Your sign needs:**

- Double line (bubble lettering)

- Colours which represent the ride
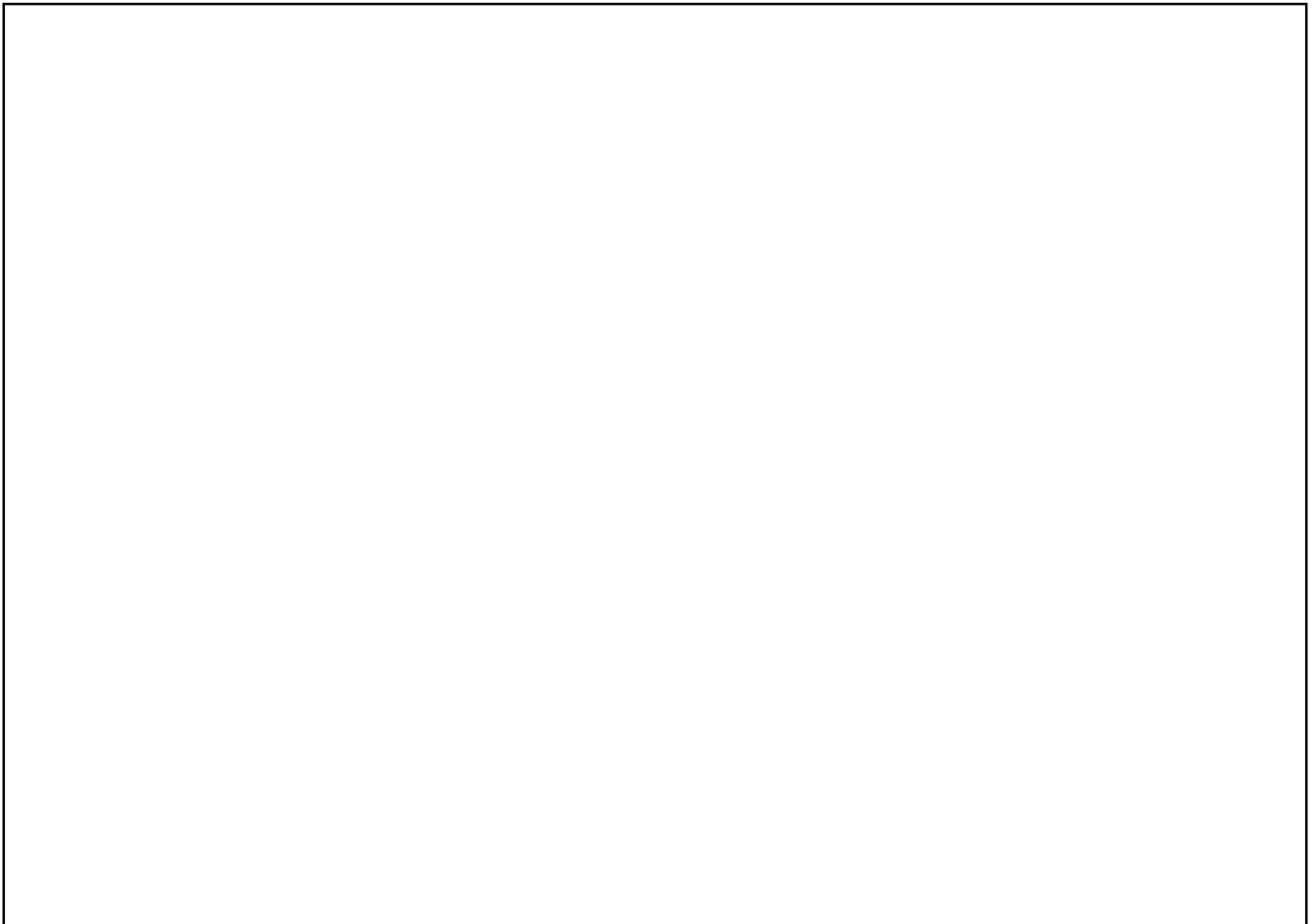
- Light pencil work

- A mix of typography and images

3 sections of the ride

Plan view of the ride showing the path in which it will take with any added extras to make it that little bit exciting.

Lesson 4

Design a menu for one of your food outlets, the menu must be varied and must include food for all the general public, including the following. **(Vegetarian) (Vegan) (Lactose intolerant)**

*List your menu choices and even add pictures if you want.

Lesson 5

Design a mascot for your theme park that represents the theme you are going for.

Your mascot design needs:

- Light pencil work
- To match the theme of your park
- Have colours which match the theme of the park
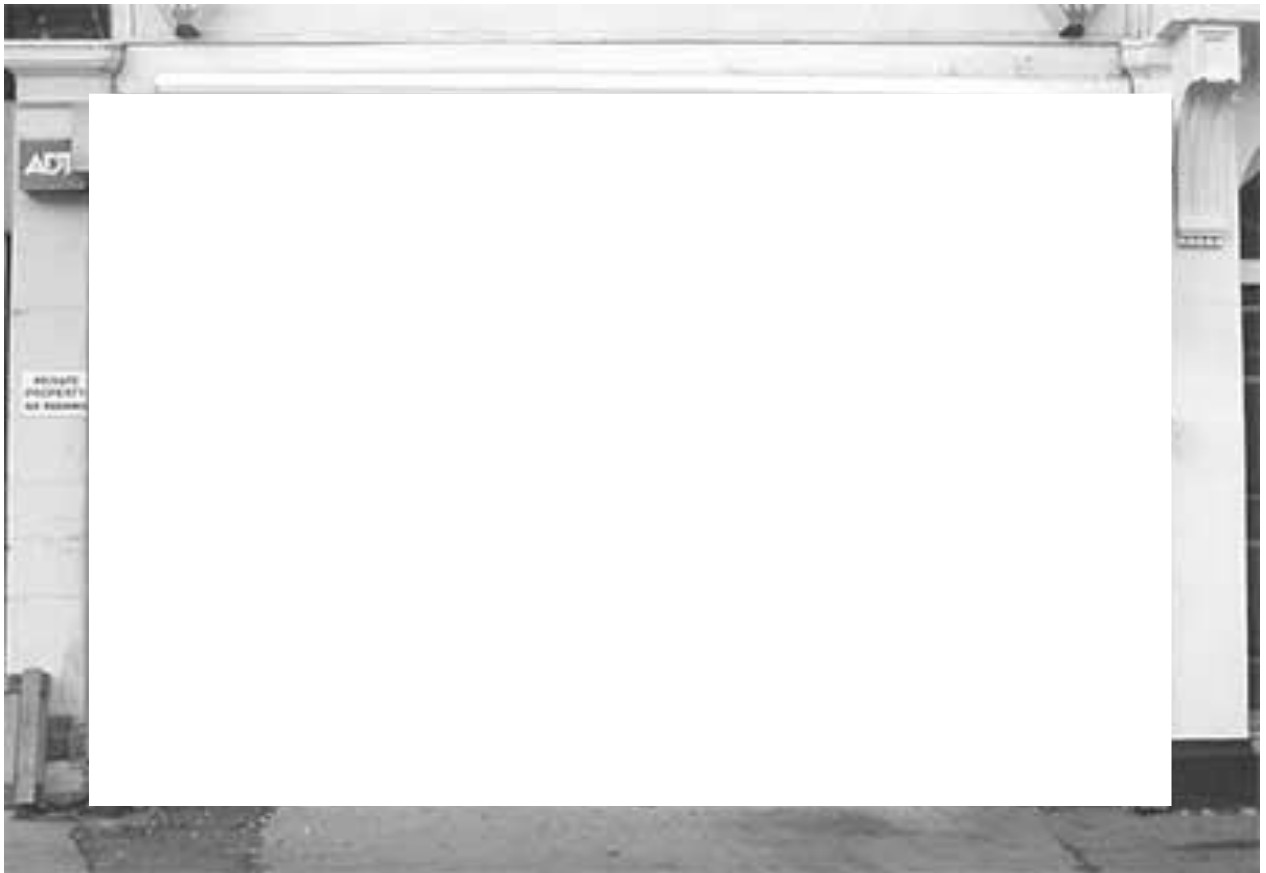- A costume
- Excellent presentation
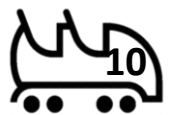
Lesson 6

Design a shop for your theme park, this could be one of the following:

- Merchandise store
- Food outlet
- Sweet shop

Your shop design needs:

- Light pencil work
- To match the theme of your park
- Have colours which match the theme of the park
- Double line guideline lettering with pictorial text
- Excellent presentation
- Window display

This task should take you 1.5 hours

Lesson 7

Cost of your park

You need to know how much your park is going to cost. With this, you need to calculate up all the expenses that you will be needing and take into account the amount you may be receiving from people.

Using the information below, I want you to calculate how much it will cost as an initial fee and show how much you will receive in return.

Costs out		Costs coming in
Rollercoaster main £650,000	Arcades small £8500	Adult £44
Rollercoaster large £350,000	Arcades medium £12,000	Child £30
Rollercoaster small £125,000	Arcades large £16,000	Fast Track £90
Water rides £80,000	Ferris wheel £25,000	Family of 2 £60
Water park £7000	Drink station £4000	Family of 4 £115
Playground £7000	Food station - £4000	Disabled £20
Restaurant large £15,000	Activity stalls - £600	Elderly £20
Restaurant medium £10,000	Gift Shop – £15,000	
Restaurant small £7500	Gifts – £10,000	
Equipment of sales £10,000	Advertising - £5000	
Staff wage per hour £9.20	Maintenance per year - £100,000	

Your costing out per year

Year 1
Year 2

Your costing in

Year 1
Year 2

How long will you need until you start making profit in your park on the assumption you get 2 million guests

This task should take you 30 mins
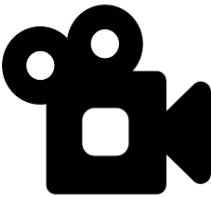
11

STRETCH ACTIVITIES

1. Take the ride that you have designed and make it using any materials that you have available at home .

2. Use free 3D modelling software such as Tinker cad or Google Sketchup to design a new food or merchandise outlet for your theme park.

3. If you have access to a mobile device make a promotional advert for your new theme park ride.

Whether you make your favourite ride, model it using CAD or even produce your very own advert, upload it to our Microsoft Teams page to share your work!

Presentation

You have now finished all of the tasks now for this project. The next task for you is to collate all of your work, photograph/scan and produce a presentation using software such as PowerPoint to present all your work to the local community and funding providers.

Then once completed upload your PowerPoint onto an email and send to kpatel@churchmead.org.

RESOURCES

In order to make this home learning project both fun and challenging, you can use some of the following resources to help support you with some of the tasks.

CAD SOFTWARE:

AUTODESK TINKERCAD

Sketchup

These free 3D drawing program that can be used to create a wide range of 3D shapes. This could be used for some of the stretch tasks such as restaurant design

VIDEO SOFTWARE:

PowToon

Free video making software for making explainer Videos, adverts and a wide range of videos. This Could be used to make your very own theme park Advert.