CREST AWARDS

DISCOVERY AWARD

WILD CREATIONS

5H

Typically 5 hours of project work
Recommended for 10-14 year olds

Team project

Design and build a prototype for an art installation which celebrates your local culture.

#chemistry
#materials
#sculpture

Llywodraeth Cymru
Welsh Government

HOW TO RUN CREST USING THIS ACTIVITY

Looking for some support? Find a mentor by contacting your local STEM Ambassador hub: **https://www.stem.org.uk/stem-ambassadors/local-stem-ambassador-hubs**

Preparation

Ready to get going with CREST? Sign up for a CREST account here: **www.crestawards.org/sign-in**

Create a new Discovery Award project with the name(s) of the student(s) and the title of the project. If you don't have all the details, you can fill these in later!

Run the project

We've created some super handy packs to help you deliver a successful Discovery Day. The activities in these packs can be done in one day or over a period of shorter sessions, whichever suits you. Students should spend 5 hours on the project.

You can download the Discovery Passport when you create your CREST account by following the link above.

Reflection

So, your students have been hard at work and completed their CREST project, but don't let this be the end of their learning. At the end of the project, ask all students to complete their Discovery Passport. This is a chance for them to reflect on all the interesting things they've learnt and the invaluable skills they have used.

Enter your project for a CREST Discovery Award

Hard work deserves a reward! Celebrate and certify your student's achievements by entering their project for a CREST Discovery Award. Simply:

Log in to your CREST account at **www.crestawards.org/sign-in**

Select the project and upload a sample of the students' Passports or other project evidence.

Check the participating students have met each of the criteria on the teacher assessment page.

Finally, complete the delivery and payment details to order your snazzy certificates.

Congratulations on completing CREST Discovery!

What next?

The scientific discovery doesn't need to end here. Students can have a go at the next level up – CREST Bronze.

Don't keep all the fun to yourselves, encourage others to take part in CREST projects and share the wonder of science. For free ideas on how to get started, see **www.crestawards.org**

CREST AWARDS

Wild Creations

CREST Discovery Day

Teacher's Guide

Llywodraeth Cymru
Welsh Government

Contents

Introduction

Inspired by a giant rugby ball bursting out of Cardiff Castle for the Rugby World Cup in 2015, Wild Creations has been designed to help teachers run an engaging CREST Discovery Day activity for 10–14 year olds on the theme of Culture and Heritage, with funding from the Welsh Government.

CREST is a UK award scheme for 3–19 year olds which recognises success, builds skills and demonstrates personal achievement in science, technology, engineering and maths (STEM) project work. CREST Discovery Days offer a great first introduction to this project work. They take one school day to complete and are ideal for classroom, club or youth group activity days.

This document, along with the accompanying resources, form a step-by-step guide to make running Wild Creations easy and straightforward.

If you would like your students to achieve a CREST Discovery Award to recognise their participation in this activity, you will need to register your students. Please visit **www.crestawards.org** for information about registering online.

If you do not wish to register for the full CREST Discovery Award, you can still use these activities and resources.

Getting started

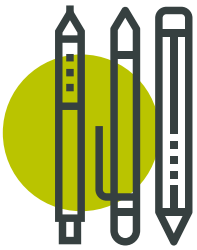
Wild Creations has been specifically developed to meet the CREST Discovery Award requirements. By undertaking the activity and completing the reflective CREST Discovery Passports, all your students should be able to achieve an Award. You can find out exactly how the day fits the Award criteria in **Appendix C**.

The challenge

Wild Creations is an exciting hands-on activity day, aimed at encouraging teams of students to engage with the challenge of designing and building a Wild Creation.

What is a Wild Creation?

A Wild Creation is an indoor or outdoor sculpture that reflects an aspect of the students' culture. Inspired by the giant rugby ball created for Cardiff Castle for the 2015 Rugby World Cup, Wild Creations are about inspiring students to use their imaginations, dream big, and discover that they can create just about anything they put their minds to!



Students will:

- Develop a concept for their own Wild Creation
- Decide on a location and draw scale plans for the location
- Build a scale model of their Wild Creation
- Develop an idea of how to market their project
- Create a detailed budget for the cost of building such a structure

As part of the day, you will divide your students into teams of 5–6 pupils (max). Each team will need the following:

- 1 x Project Manager
- 1 x Finance Manager
- 1 x Design Engineer
- 1 x STEM Researcher
- 1 x Graphic Designer
- 1 x Marketing Manager

Top tips

- When considering timings, start with the end of your school day and work backwards
- Consider the timings that cannot be changed – such as lunch breaks – and schedule around them
- Try and plan the day to give your students as much time as possible for the practical activities
- Before presentations, allow 5 minutes for students to clear their tables and tidy away any equipment
- Before starting the activity, think about which students will make strong leaders and assign them the role of Project Manager for their team (the groups can then decide the other roles)
- Make team role badges using sticky name labels

Example schedule

On the next page is an example schedule of how you can organise the day. You may want to create something similar or adapt it based on the number of students taking part, and your school's own timetable.

Activity	Description	Time required
Introductions **Passports & Evaluation**	Wild Creations – Welcome and introduction to all students at the start of the day. Split students into teams and assign Project Managers. If you have registered your students for a CREST Discovery Award, introduce CREST Discovery Awards and explain what the CREST Discovery Passports are for. Give these to Project Managers to distribute to team members.	20 mins
Wild Creations Part 1	Wild Creations presentation – this is the first of the two main sessions for the day. The Wild Creation challenge and purpose of the Discovery Day are established here. Cultural case studies presentation – this is a range of examples to discuss as a group. Planning & Information Workbooks – these are the two main resources for the Discovery Day. Print one per team and encourage students to follow the Planning Workbook when developing their Wild Creation.	2 hrs
	Break	
Wild Creations Part 2	This second section focuses on more detailed design, creation and the building of the team's Wild Creation, using both the Planning and Information Workbooks. The teams of student will work together to come up with a concept, make a scale model, and estimate the costs of the project from the information provided.	2 hrs
	Lunch	
Finalise the presentations	A chance to make any final touches to the model and/or presentation.	15 mins
Presentations	Teams give their 5-minute presentations. Teachers provide constructive feedback about the presentations, and congratulate students on a successful project. If you have registered for a CREST Discovery Award, ensure that students have time to complete their CREST Discovery passport to reflect on their work and qualify for an Award.	45 mins

Wild Creations

Overview

There are four main resources for this project:

1. Wild Creations PowerPoint
2. Cultural case studies
3. Information Pack
4. Planning Workbook

Wild Creations PowerPoint

The Discovery Day is based on this presentation, which gives an overview of the day's activities. The purpose of the presentation is to:

- Introduce the concept of a Wild Creation
- Explore the concept of culture, what culture means to individuals and how it affects their lives
- Set out the Discovery Day challenge

Aims and objectives Slide 2

This project has been written with cross-curricular activities in mind. It will encourage students to use transferable STEM skills, e.g. from science, literacy, design and technology, maths and art.

It may be helpful to encourage students to consider topics they have been studying in school, e.g. structures, forces, scale, volume, area, design, etc., and how they might transfer that knowledge into their Discovery Day project.

What is a Wild Creation? Slide 3

The inspiration for this project is based on the South Wales company 'Wild Creations' who specialise in building large bespoke sculptures for a range of different clients. They have worked on a variety of projects, including *Doctor Who*, film launches, and with multinational companies. More information can be found at **www.wild-creations.co.uk**.

Watch the **Wild Creations video** to find out more about the company, the process and skills needed to create large scale Wild Creations.

Culture Slides 4 & 5

What does culture mean to you? Set the scene for the day's activity with a class discussion on culture and what it means to your students. It can be useful to personalise this with additional images of your area, people who live there, local activities, and points of interest.

Students are encouraged to engage with their own culture and find a way to express this through designing their very own Wild Creation.

Cultural case studies Slide 6

Open the **Cultural case studies presentation**. This includes a section on other Wild Creation ideas as inspiration for the students. The aim of this presentation is to inspire students to think big and out of the box.

Your Wild Creation challenge Slides 7–10

These slides give an overview of the:

- Wild Creation challenge
- Planning Workbook
- Information Pack
- Teamwork and the individual roles for students
- Presentation requirements

Cultural case studies

The purpose of this presentation is to show students some other types of sculptures, attractions and installations that have been made around the world, to give them ideas and inspiration. Students should look at the examples, discuss what they like and dislike about them, and consider the practicalities of building something like them.

This presentation is delivered to the whole class. It may also be useful to print out the resources for each team to refer to throughout the day.

Information Pack

This is the main information resource for the development of the Wild Creation. Teams should use this resource to find the following information:

- Team job descriptions
- Location suggestions

- The target audience
- Design process overview
- Scale – how big things are!
- How to cost a Wild Creation

If you have access to iPads, laptops or computers, this can be useful to extend the students' knowledge and research. However, these are not essential to the success of the day.

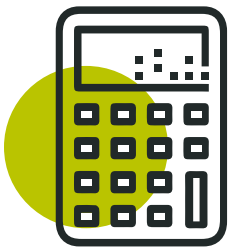
Planning Workbook

This is the main place for students to record their ideas and plan their Wild Creation. If the teams follow the process throughout this booklet they will be able to complete a successful project. Key components of this workbook include:

- What aspect of culture is their Wild Creation based on?
- Who is the target audience?
- Brainstorming the Wild Creation
- The location – deciding on where it will go and creating a scale map of the area
- Model making – creating a scale model of their Wild Creation
- Marketing and what is required
- Finance and budgeting

Working with scale

There are two key concepts on scale in this project that students may need assistance with:



1. Students find it hard to visualise the actual size (and therefore scale) of their proposed Wild Creation. There are a few examples in the Information Pack to help with this. A useful additional exercise is to quickly measure the dimensions of the room you are in (h x l x b) in metres, giving the students a reference point to compare to.
2. The second point of scale is translating the size of their Wild Creation from metres into cms to make their scale model. It is worth spending 5 minutes talking to the students about suitable scales, for example 1cm = 1m or 10cm = 1m. Understanding this scale will help them make their model and cost it appropriately.

Team presentations

Each team should prepare a 5-minute presentation about their Wild Creation. It is important to encourage all team members to stand up with the team, even if not all speak. Teams should decide which bits of information are relevant and should be included in the presentation. Any information not mentioned in their presentation should be available for you to see afterwards.

Avoid using computer presentations unless supporting access – school networks can be unreliable and students can waste time on the appearance or saving/uploading, to the detriment of the content. Teams should allow plenty of time to collate their presentation and rehearse.

Operational notes

Tips for keeping students on track

- Adults are there as facilitators – students are encouraged to make their own decisions and direct the project themselves
- There are no right or wrong answers
- Occasionally Project Managers should bring their teams together to check on progress
- Encourage the Project Manager to make sure that every member of the team is involved with the brainstorming and concept development stage of the project
- Encourage each student to take on their role as the ideas progress throughout the day
- Don't give out answers too easily; direct students to where they might find answers themselves, e.g. Information Pack, the internet
- Bring all teams together during late morning to explore collectively 'what makes a good presentation?'
- Ensure that all students are working in a positive learning environment and manage behaviour appropriately
- If you have registered your students for a CREST Discovery Award, remind them to record comments in their CREST Discovery Passports as appropriate.

Team roles

This project is based on teamwork and the development of a collective idea, and so it is important that every member of the team is involved throughout the process. The team roles are designed to give each individual responsibility for some aspect of the project.

The Project Manager role is essential to the successful delivery of a successful activity. It is also an ideal opportunity for students to develop their leadership skills. Choose students who will be able to lead a team and who can also ideally:

- Manage team members
- Resolve disagreements
- Give encouragement and advice to team members
- Make key decisions about the project
- Ensure there is an even distribution of workload and reassign team members where necessary
- Maintain the high standard of work produced by the team
- Take the opinions of all team members into consideration
- Assign team members specific role responsibilities where necessary
- Organise the 5-minute presentation at the end of the day

Other team roles can be duplicated if necessary. If there are not enough members in a team, then the Graphic Designer and Marketing Manager can be combined, as can the Design Engineer and STEM/Materials Researcher.

Practical activities

There are several different activities and resources to use throughout the presentation, including:

- What does culture mean to the team?
- Concept development for a Wild Creation
- Location planning, including drawing a scale map
- Concept refinement and model making
- Creating a range of marketing material examples
- Creating a detailed budget for the project, making sure the most appropriate materials are used at the best cost

Equipment and resource list for each team

For general working:

- Ideally, tables and chairs grouped together (in a hall for a large group or a single classroom for small groups)
- Whiteboard or projector presentation facilities
- Where possible, access to computers/iPads for research
- Paper for rough working
- Coloured pencils or felt-tip pens

For the location map:

- 4 pieces of graph paper
- Sellotape

For model making:

- Sticky labels to write names and roles on
- Plain and coloured paper of a range of sizes and textures
- A range of stationery – scissors, glue, pencils, pens, coloured pencils, felt pens for poster work, rulers, brass butterfly clips, Blu tack or modeling clay, etc.
- Crafting materials – art straws of different thickness, lollipop sticks, kebab style sticks, Sellotape, string, pipe cleaners, tin foil, tissue paper, etc.

Plenary

After the presentations, provide teams with feedback/constructive criticism and congratulate them on their endeavors – make sure what you say is encouraging and celebrates the teams' successes. Schools can decide to make this challenge competitive and award prizes for the best Wild Creations.

After the day

Achieving a CREST Discovery Award

If your students are aiming for a CREST Discovery Award, you will have been following the Teacher Guidance notes in **Appendix B** (pages 15–16), using the assessment criteria to observe their progress throughout the project.

So what should you do next? If you are unsure whether an individual student should receive a CREST Discovery Award, review their CREST Discovery Passport and consider whether they have met the assessment criteria (it is not intended that teachers review all CREST Discovery Passports after the event).

Register your students' names on the **www.crestawards.org** website or via your local coordinator, in order to arrange certificates.

If you have enjoyed the day:

- Make your CREST Discovery day an annual event
- Encourage your STEM colleagues and students to engage in CREST Bronze projects. To get some free ideas on how to get started, see **www.crestawards.org**

Appendix A: About Wild Creations

Founded in 2010, Wild Creations is a creative company based in Cardiff, Wales and founded by Matthew Wild.

Mr Wild previously worked on the set of *Doctor Who*, and was responsible for dressing the sets before filming; piecing together what the set design and prop teams had created to craft whole environments!

The attitude of the company is 'anything is possible, there are no limits to your creativity and projects are as big as your imagination'.

Wild Creations operates from a 16,000sq ft workshop building in Cardiff Bay and employs a wide range of skills.

More information can be found at **www.wild-creations.co.uk**

Appendix B: CREST Discovery Awards

If you have registered your students for a CREST Discovery Award, you will be recognising the skills that students will gain through participation in the day.

Teacher's guidance

Teachers should observe students individually throughout the day and record any information which could be used to provide evidence of students meeting the following assessment criteria:

Self-management

Readiness to accept responsibility, flexibility, effective time management, motivation to improve own performance, confidence when tackling tasks.

Team-working

Respecting others' work and views, working collaboratively, negotiating/persuading, contributing positively to discussions.

Problem-solving

Analysing facts and circumstances in order to apply creative and imaginative approaches to developing realistic, innovative and original solutions.

Research

Acquiring new knowledge relevant to the task and applying it appropriately.

Communication

Following written and verbal instructions (the brief), talking and listening to other team members, producing a structured presentation which relates to the original brief and which reflects the creativity used by the group during the day.

Reflective practice

The ability to recognise what knowledge and skills they have gained, where they could have worked more effectively, and where they achieved/exceeded expectations.

CREST Discovery Passport

This is primarily intended as a self-reflection tool for students. Each student is assessed as an individual even when working within a team. Teachers should remind students at regular intervals to add comments to their Passports.

The Passports should be collected at the end of the day and can be used to confirm (or not) if a student has met the assessment criteria. This should only be necessary if teachers have any concerns about the performance of particular students.

Appendix C: FAQ

Do I have to do a CREST Discovery Award?
You can choose either to register your students for a CREST Discovery Award or deliver the activity on its own.

How many students can take part?
Students will work in teams to design their Wild Creation. It is recommended that 5–6 students make up each team. As long as you provide sufficient supervision for the students, a CREST Discovery Day can cater for a single class or whole year group.

How many adults will be needed to supervise the activity?
Adults will be required to deliver the project overview, including the Case Studies presentation, to the students. They will then need to supervise activities under normal school requirements and provide constructive feedback at the end of the challenge. How many adults are required will depend on the number of students taking part in the day.

When do I hold the event?
It doesn't matter what time of year you hold your Discovery Day, just don't forget to plan the date and tell everyone well in advance. That way you can avoid other events conflicting with yours, and get more support from across the school.

Where do I hold it?
How much space you will need and which rooms will need to be booked will depend on the number of students participating in the day's activities.

How long will it take?
Begin by establishing your desired finish time, and then work backwards from there and break the day down into timed sections (see the example timetable on page 6 to get an idea of timings).

Do I need access to the internet?
The resources have been designed to work without the use of technology. However, if you have access to computers, laptops or iPads they would provide a useful research tool for the students.

What consumables and resources will I need?
These should be sourced in advance of the day (see the equipment list on page 12).

www.crestawards.org

email: crest@britishscienceassociation.org

CREST Awards is the flagship Education Programme of the British Science Association.

Registered charity: 212479 and SC039236

Supported by the Welsh Government

Additional items

Flooring	Paving stones	See graph on page 11		✓
	Grass			✓
	Carpet		✓	
	Rubber		✓	
	Existing	£0	✓	✓
Lighting	Single street light	£950		✓
	Floor-mounted light	£220	✓	✓
	Outdoor fairy lights	£150		✓
	Floodlights	£1,000		✓
Seating	Fixed concrete bench	£500		✓
	Wooden bench	£380	✓	✓
	Temporary plastic seating	£80	✓	✓
Sound	Sound sensor trigger	£750	✓	✓
	Overhead speakers – internal	£600	✓	
	Outdoor speaker	£400		✓
Water features	Water fountain x 1	£1,800		✓
	Water pond 5m x 10m	£1,650		✓
Trees	Single mature tree	£180		✓
Marketing	Interpretation panel	£300	✓	✓
	Pop-up banner	£250	✓	
	Flag 1m x 5m	£180	✓	✓
	Leaflets x 100	£100	✓	
	Leaflets x 500	£140	✓	
	Leaflets x 1,000	£150	✓	

CREST AWARDS | Wild Creations

Information Pack

Llywodraeth Cymru
Welsh Government

Job descriptions

Project Manager

Your role is to oversee the whole project and make sure that, at the end of the day, you have a great project to present.

You will need to:

- Assign roles to other team members
- Manage your team members to the best of their capabilities
- Resolve disagreements
- Give encouragement and advice
- Make key decisions about the project
- Ensure there is an even distribution of workload and reassign team members where necessary
- Maintain the high standard of work produced by your team
- Take the opinions of all team members into consideration
- Have your presentation ready for the end of the day

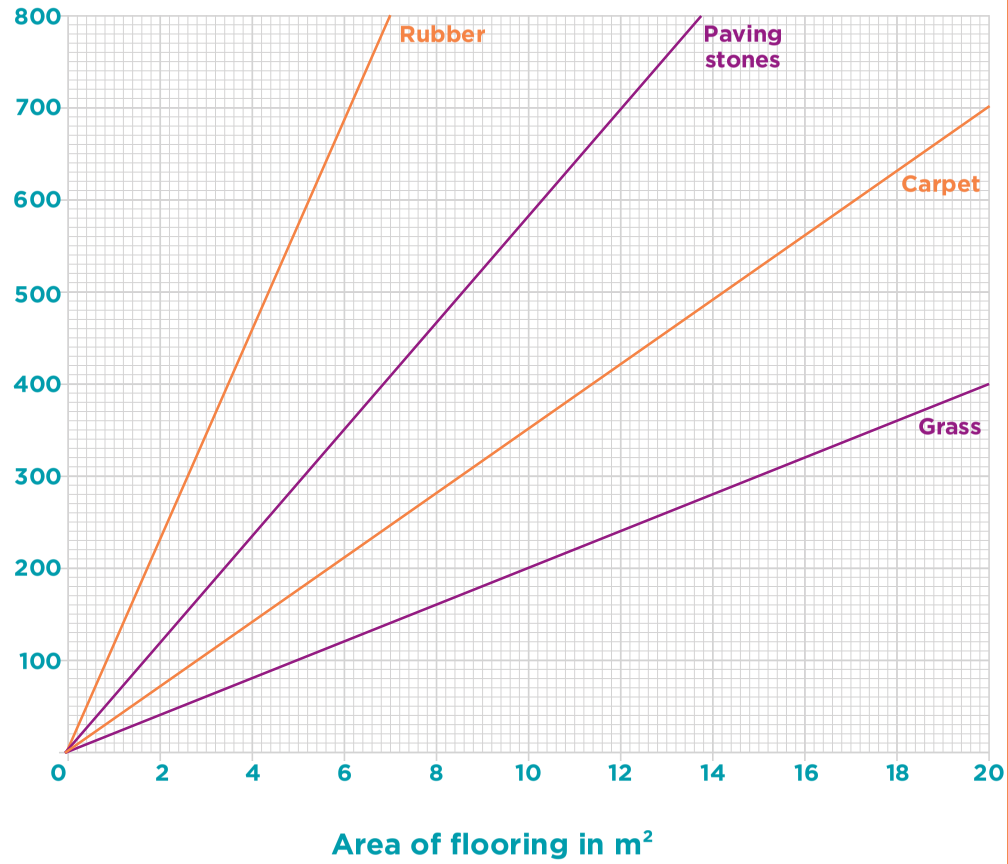
Finance Manager

Your role is to create a detailed budget or cost for the project.

You will need to:

- Manage the Wild Creation budget
- Ensure all team members understand the material costs from the Information Pack
- Advise the Project Manager and team members on the budget and the overall costs of the project
- Present the financial costs and final budget as part of the main presentation

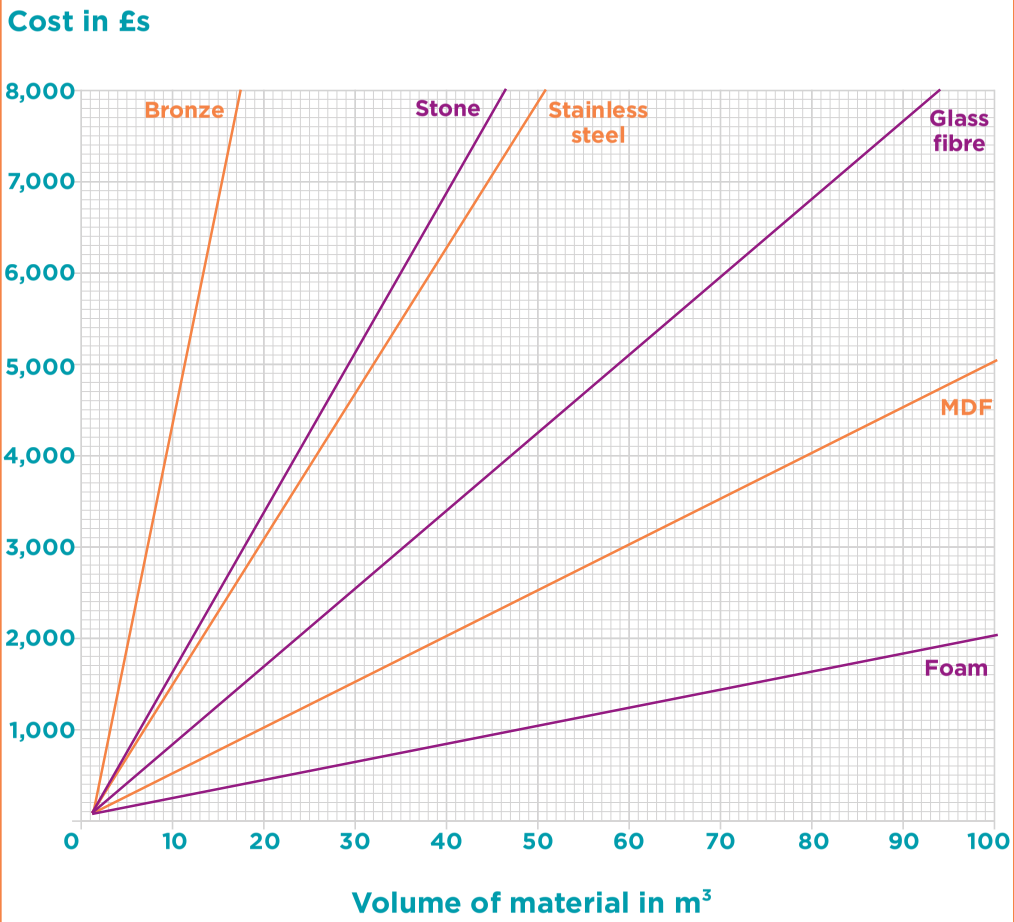
Cost per square metre of flooring



How big?

An average classroom is 2.8m high x 4m wide x 8m long. Measure your lab or classroom!

Cost per cubic metre of materials



How big?

The Six Bells mining statue in Abertillery, known as the Guardian, is 12.6m high on a 7.4m stone plinth

Design Engineer

Your role is to lead on the design of your Wild Creation with the help of all the other team members.

You will need to:

- Produce a design for your Wild Creation that is inspiring and fit for purpose
- Create accurate drawings that will clearly illustrate all aspects of the project, and label them clearly for the audience to see
- Make a careful selection of materials together with your STEM Research and Project Managers
- Liaise with the Finance Manager to ensure the materials are all within budget

Graphic Designer

Your role is to work closely with the other team members to produce all the graphics and illustration necessary for the project.

You will need to:

- Create a spectacular and eye-catching Wild Creation
- Create images for the project to illustrate and explain your Wild Creation
- Ensure that there are strong cultural references
- Produce a range of graphics that will complement the project and can be used to market your Wild Creation

Job descriptions

Marketing Manager

Your role is to work closely with the Design Engineer and Graphic Designer to ensure people know all about your project.

You will need to:

- Think about different ways of marketing your Wild Creation
- Decide how and why you will tell people about your Wild Creation
- Think about a name and slogan for your Wild Creation
- Produce a selection of marketing materials to use as examples in the presentation, e.g. radio ads, flyers, social media

STEM/Materials Researcher

Your role is to research and provide key information to other team members about the STEM links and materials used.

You will need to:

- Use the resources in the Information Pack to recommend the most suitable materials for your Wild Creation
- Make sure you consider how STEM is featured in your project
- Prepare a report on what aspect of STEM you have included in your project and why, e.g. material analysis, subject matter, structures, forces
- Work with the Finance Manager to negotiate the cost of individual materials and work out how savings could be made, if required

Cost of materials

Notes	Material	Cost	Indoor	Outdoor
Structural framework underneath the sculpture (art straws)	Stainless steel tube	£55 per m	✓	✓
	Scaffolding poles	£47 per m	✓	✓
	Wood	£18 per m	✓	✓
Gas pipe for use inside a sculpture	Copper pipe	£50 per m	✓	✓
Plinth or mounting block to hold the 'Wild Creation' (paper)	Stone	£800 per m^3	✓	✓
	Wood	£150 per m^3	✓	✓
	Fibreglass	£350 per m^3	✓	✓
Take the outside dimensions of your 'Wild Creation' sculpture and measure the volume of material in m^3 needed to build this	Bronze	See the graph on page 10	✓	✓
	Stone		✓	✓
	Stainless steel		✓	✓
	Fibreglass		✓	✓
	MDF (wood)		✓	
	High-density foam		✓	✓

How big?

The Ball in the Wall is 7m high x 4m wide

How to work out the cost of your Wild Creation

Framework of Wild Creation

Every 1cm of material you use in your physical model = 1m at actual size. Refer to the chart for the cost per metre of different materials.

Volume of Wild Creation

Working out the cost of the sculpture is extremely difficult when you don't know the exact amounts of materials you are using, so you are going to estimate cost by working with volumes.

Take the outside dimensions of your Wild Creation sculpture and work out the volume. For example 'the shape I created is 3cm x 4cm x 5cm'.

Volume in cm^3 = length x breadth x height = 3 x 4 x 5 = $60cm^3$

Then use the graph on page 10 to decide which material to use.

Area of Wild Creation

Work out the total area covered by your Wild Creation using the same dimensions as you used to work out the volume.

Area in cm^2 = length x breadth = 3 x 4 = $12cm^2$

Area for invited guests

Number of guests x suggested area per person
e.g. 0.5 m^2 per person.

Total area required for Wild Creation

Area of Wild Creation + area of guests + area of additional items.

Now use the charts to assign costs for individual materials based on the above information.

How big?

The Angel of the North is 20m high with a wingspan of 54m

Example locations

School entrance foyer

Civic centre/public space

Tourist attraction

Target audience

When thinking about your Wild Creation, you need to consider who you are designing it for. These people are your target audience.

Let's think about an iconic Wild Creation from the 2015 Rugby World Cup as an example:

- Who was the target audience?
- Was it designed for multiple or single users?
- Do you have to play rugby to appreciate it?
- Why was it put on Cardiff Castle?
- Was it aimed at a male and/or female audience?
- Do you have to be a certain age to appreciate it?

Rugby World Cup marketing

All ages and abilities

Grassroots rugby clubs

Youth rugby clubs

Non-playing supporters

Worldwide rugby fans

Professional and amateur players

Welsh culture

Explosion, excitement, entertainment

Passion and pride

Celebration of Welsh Rugby

Industry design process

Concept design

At this stage there are no limits on what you can do – think big and don't worry too much about limitations!

The concept stage is drawing sketches with paper and pencils, and making pictures and notes of what you want/need/like etc.

Make as many notes as you can to capture your team's thoughts.

Some form of testing or evaluation would normally happen at this stage to check your product is what the client wants.

Model making

Model making takes your concept ideas and turns them into a physical model that you can use.

Model making can be computer designed or it can be a physical model made from plastercast or silicone etc.

Mould making for casting

A cast is made from the final model you made. This cast will then allow you to make replicas time and time again. The expense is in setting up the cast in the first place.

Metalwork & woodwork

Many Wild Creations, interactive exhibits or sculptures have a supporting metal or wooden framework under the moulding. Skills such as welding are essential to build metal structures.

Wood can also form frameworks for creations. However, wood can also be used to create the cabinetry or body of the sculptures, e.g. exhibits you would find in Techniquest.

Finishing

Interfaces and certain parts such as electronics, buttons, moving parts are added after the painting stage. They are then polished and prepared for shipping.

Painting

Designs can either be spray-painted by hand onto a variety of materials, powder-coated onto metal surfaces, or hand-painted for fine details.

Money, money, money

The Finance Manager should record all the project costs for your Wild Creation, but make sure all team members feed into this process!

You will need to:

- Work out the cost of the framework
  See **Information Pack** pages 8 & 9

- Work out the volume of your Wild Creation
  Information Pack pages 8 & 10

- Work out the area required by your Wild Creation and costs for flooring. **Information Pack** pages 8 & 11

- Work out the total area for the installation of the Wild Creation

- Cost any additional items you might want
  Information Pack page 12

CREST AWARDS | Wild Creations

Planning Workbook

Llywodraeth Cymru
Welsh Government

What does culture mean to you? Brainstorm words and thoughts to help communicate your ideas.

What aspects of your culture do you want to celebrate in your Wild Creation? e.g. science or engineering, people, environments, food, music.

Marketing your Wild Creation

What is the slogan or main message for your Wild Creation?

How will you let people know about your Wild Creation?

Which marketing tools would you use?

Tick the boxes that would suit the marketing for your project. Provide examples for some of the marketing tools in your team presentation.

- ○ Leaflets/flyers
- ○ Interviews
- ○ TV
- ○ Radio advert
- ○ Billboards/posters
- ○ Newspaper/magazine advertising
- ○ Bus adverts
- ○ Instagram
- ○ Twitter
- ○ Facebook
- ○ Snapchat

Make your Wild Creation

Make a scale model of your Wild Creation using the same scale that you used to draw your location on the graph paper.

Make the supporting framework for your Wild Creation using sticks, art straws or other materials.

Cover the framework with materials such as tin foil, tissue paper, paper, Blu tack or other craft materials to get the finished shape you want.

Remember to measure the amount of material you use, so you can work out the costs. Use the **Information Pack** to look up these costs.

Who is your target audience?

See **Information Pack** page 6.

Brainstorm & research your ideas

- What will your Wild Creation do?
- What is the cultural connection?
- Is it permanent or temporary?
- How big is it?
- Is it inside or outside?
- Are any extras needed at the location?
- What materials are the best to use, and why?
- How much will it cost?

Brainstorming

Answering the questions from the previous page and using your ideas of culture, sketch out the details of your Wild Creation.

Location

Decide on your location.
See **Information Pack** page 5 for ideas.

- ○ Civic centre
- ○ School foyer or shopping centre
- ○ Outdoor tourist venue or attraction

Draw out a plan view of your location. To do this you will need to accurately join 4 pieces of graph paper together.

Next decide on a scale for your location
e.g. 5 x 5 little squares = $1m^2$.

Make sure you can also accommodate 200 guests at the launch event. To work out the area, you will need $0.5m^2$ per person.

Draw a plan view or footprint of your location on the graph paper so you know where your Wild Creation will go.

Make sure there is enough room for people to walk round and see your Wild Creation!

CREST AWARDS

Wild Creations

CREST Discovery Day

Llywodraeth Cymru
Welsh Government

Aims & objectives

To use your science, technology, engineering, mathematical and creative skills to design a Wild Creation that will celebrate your culture.

What is a Wild Creation?

Watch the **Wild Creations video** to find out more about the company, the process and the skills needed to create large scale Wild Creations:
https://youtu.be/fRKp1ngLMLQ

What is culture?

Culture and you

As people move around the world, our culture becomes influenced by the many groups of people living in the country. And as countries change and develop, so does their cultural diversity.

?

What does culture mean to you?

Why is it important?

Cultural case studies

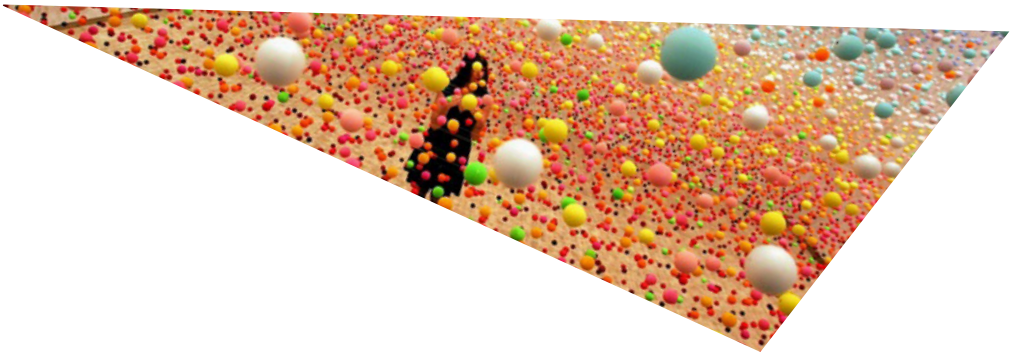
The Cultural Case Studies Pack shows a number of different examples of Wild Creations, from visitor attractions to interactive art installations.

Discuss the different projects in your teams or as a class.

?

Which case studies do you like the best?

Why?



Wild Creations – the challenge

Your team challenge is to create your own Wild Creation to celebrate an aspect of your culture.

The Wild Creation must be displayed at one of the following locations:

- Outdoor civic centre or public space
- Indoor school foyer or shopping centre
- Outdoor tourist venue or attraction

Your Wild Creation will need to:

- Make an impact
- Fit into your chosen location space
- Have a detailed budget
- Accommodate 200 invited guests to the launch

The challenge – help

- **Information Pack** –
  information and research you need to complete this challenge.
- **Planning Workbook** –
  a step-by-step guide to coming up with your own Wild Creation. Follow the stages in this booklet to help create your end product.
- **Model-making materials** –
  use these to create a scale model of your Wild Creation.

It's all about teamwork!

Set up your Wild Creation team with the following roles:

- Project Manager *(only one student for this role)*
- Finance Manager
- Design Engineer
- Graphic Designer
- Marketing Manager
- STEM/Materials Researcher

Job descriptions outlining each role are in the Information Pack.

Presentations

Imagine the Welsh Government have invited you to present your Wild Creation ideas to them. The winning team will need to demonstrate great teamwork, presentation skills, knowledge, entrepreneurship, and a creative Wild Creation.

Include the following in your presentation:

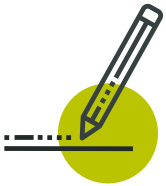
- Your Wild Creation concept and target audience
- Why did you choose the materials you used?
- Marketing and graphic illustrations, including examples
- Cost breakdown
- How have you worked as a team?

Reflection on Discovery Day

What have you discovered today?

What skills have you developed?

What did you enjoy?



Remember to fill in your Discovery Day Passports!

CREST AWARDS

Wild Creations

CREST Discovery Day

Llywodraeth Cymru
Welsh Government

CREST AWARDS

Wild Creations

CREST Discovery Day

Cultural case studies

Llywodraeth Cymru
Welsh Government

Wild Creations is a company based in Cardiff that creates sculptures, props and displays for all sorts of industries, including TV, exhibitions, events, PR and marketing.

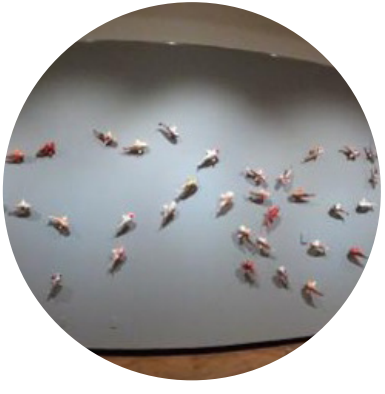
Best-known for the **'Ball in the Wall'** at Cardiff Castle, the team have a range of talents which they are not afraid to unleash in any combination to make the most eye-catching creations they can imagine!

Key facts
Indoor/outdoor: Outdoor
Main materials: Steel framework with fibreglass and high-density foam moulding
Size: Very big!
Duration: Temporary
Moving parts: No
Interactive: No
Location: Wales

This public art installation entitled **'Vertical Pond II'** was created by artist Robert Lang.

Using the ancient art of origami, each fish was folded from a single sheet of special handmade paper. Like real koi fish, each origami creation and each sheet of paper has a unique pattern; no two are alike.

Key facts
Indoor/outdoor: Indoor sculpture
Main material: Custom-made paper
Size: 60 fish on wall 10.7m x 3m
Duration: Temporary travelling exhibition
Moving parts: No
Interactive: No
Location: USA



Anthony Howe spent his early career painting watercolours, but after moving to Manhattan and taking on a part-time job making metal storage shelves for offices, he discovered a new medium: metal.

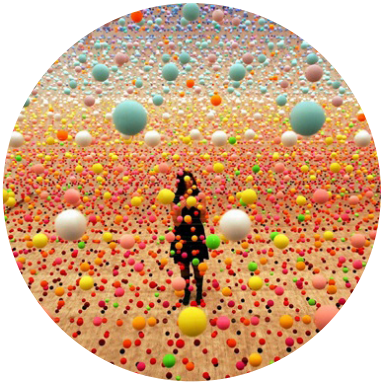
Further exploration combined with previous interests in the wind and movement led to the creation of his unique **kinetic wind sculptures**.

Key facts
Indoor/outdoor: Outdoor
Main material: Stainless steel
Size: 4m high
Duration: Permanent
Moving parts: Yes, powered by the wind
Interactive: No
Location: USA

The main architectural centerpiece welcoming visitors to the Ontario Science Centre is a permanent outdoor water fountain. This piece of artwork is also a musical instrument, called a **hydraulophone**.

Members of the public can play it at any time of the day or night!

Key facts
Indoor/outdoor: Outdoor sculpture
Main materials: Water, stainless steel, concrete, lights
Size: 10m diameter, 5m high
Duration: Permanent
Moving parts: Water
Interactive: Yes
Location: Ontario, Canada



‘Atomic: full of love, full of wonder’, created by artist Nike Savvas, is a room full of bouncy balls representing the models used in classrooms to teach molecular structures.

Thousands of coloured balls are suspended on transparent nylon strings filling the whole gallery space. They gently move as large fans create a breeze within the gallery.

The shimmering haze of balls is designed to make visitors think of the atoms that are the fundamental building blocks of the whole world around us.

Key facts
Indoor/outdoor: Indoor sculpture
Main materials: Polystyrene balls, nylon wire, paint, electric fans
Size: 8m x 8m x 8m
Duration: Temporary
Moving parts: No, but movement from the room fans
Interactive: No
Location: Australia

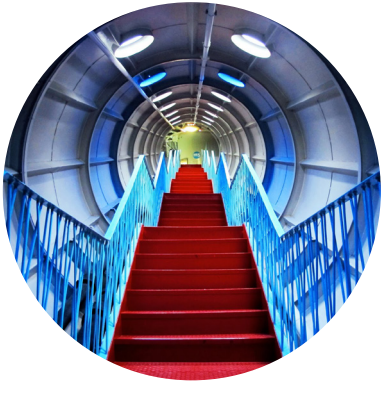
Celebrating the role of the Sanger Institute in decoding the human genome, a permanent installation called **'Genome Stripes'**, designed by Katy Hallett, can be found on a cycle path in Cambridgeshire.

A series of four differently coloured stripes, representing genetic letters or bases, have been laid on the cycle path using thermoplastic stripes and then heat welded onto the tarmac.

Key facts
Indoor/outdoor: Outdoor sculpture
Main materials: Thermoplastic strips, powder-coated steel
Size: 1 mile
Duration: Permanent
Moving parts: No
Interactive: No
Location: Cambridgeshire, UK

The **'Atomium'** was created for the World Fair of Brussels in 1958. The unique structure symbolises an iron crystal that has been enlarged 165 billion times. It was designed to symbolise trust in the scientific progress made since the end of World War II.

Now the Atomium is an international tourist attraction for Brussels. Three spheres are home to temporary exhibitions and multimedia installations. A sphere is reserved for children, with workshops and a place for sleepovers. The highest sphere is a restaurant with fantastic views of Brussels.



Key facts
Indoor/outdoor: Outdoor visitor attraction
Main material: Stainless steel
Size: 102m high; Spheres: 18m diameter; Tubes: 3m diameter
Duration: Permanent
Moving parts: No
Interactive: No
Location: Brussels, Belgium

'In the Zone' was a travelling interactive science exhibition celebrating the human body and sport, designed especially for the 2012 London Olympics.

Over 90,000 people used the exhibition across the UK. A TV-style science show entertained the audience before they entered the huge inflatable dome to enjoy the many interactive exhibits that explored the human body.

Key facts
Indoor/outdoor: Outdoor exhibition
Main materials: Canvas dome, astroturf, graphics, trailer
Size: Footprint: 26m x 12m; Dome: 11m diameter, 5.5m high
Duration: Temporary travelling exhibition, 1–14 days' duration
Moving parts: Yes
Interactive: Yes
Location: UK

A **luminous blue cycling strip** can be found near Lidzbark Warminski in Poland. It is made from a synthetic material that can give out light for up to ten hours at a time once charged by the sun throughout the day.

Testing is still taking place on the sustainability of the material and how to make it as cost-effective as possible.

Key facts
Indoor/outdoor: Outdoor
Main materials: Lumiophores, tarmac
Size: 100m test track
Duration: Permanent
Moving parts: No
Interactive: No
Location: Lidzbark Warminski, Poland

To celebrate the launch of retail giant John Lewis's Cardiff store, three **large-scale model replicas** of a handbag were created. They were placed around Cardiff City Centre for the public to view.

The patterns of the crocodile skin in this large-scale handbag were carved from high density foam before being completely covered in fibreglass.

The shape, size, colour and texture of the bags was accurately replicated for all the models.

Key facts
Indoor/outdoor: Outdoors
Main materials: Fibreglass and high-density foam
Size: 4.5m tall
Duration: Temporary
Moving parts: No
Interactive: No
Location: Cardiff, Wales