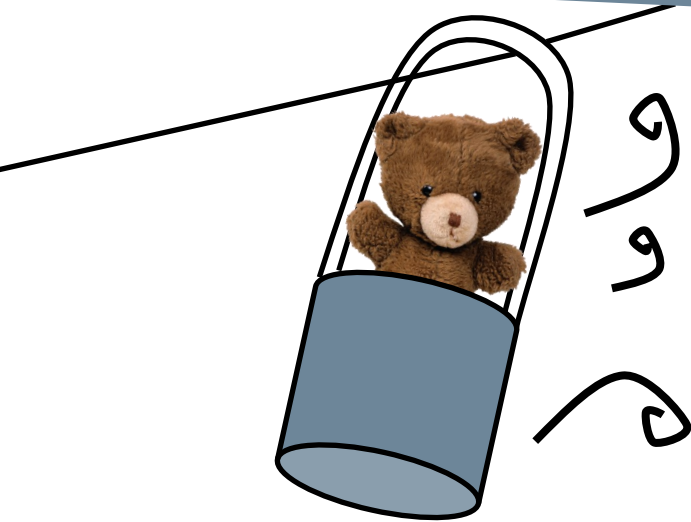





Get Creative Challenge

Design and make a zip wire for a toy!



		
~30 mins	easy	supervised

An easy children's activity to make a zip wire for a toy out of recycling and craft items.

You will need:

- a small child's toy
- string
- paper
- pens or pencils
- sticky tape
- straws / pipe cleaners (optional)
- plastic cups / yoghurt pot (optional)
- toilet roll tubes (optional)
- other miscellaneous recycling / craft items (optional)



Engineers use a zip wire as a work platform

The Union Chain Bridge is currently undergoing conservation works. This involves dismantling the bridge, restoring or replacing parts, and then reassembling the structure. To dismantle the bridge, engineers have installed an aerial ropeway, or, zip wire (pictured). This suspends a work and transport platform alongside the bridge. This children's *Get Creative Challenge* was inspired by the engineers' dismantling of the bridge using this aerial ropeway.

Why is the Union Chain Bridge celebrated?

Built in 1820, the bridge holds the Guinness World Record as the first chain suspension bridge in Europe to carry wheeled traffic, and it remains the oldest still in use worldwide.



Children's Activity Learning Aims:

Using resourcefulness and creativity to make a toy's zip wire out of recycling and craft items found at home. The activity encourages engineering thought processes to develop design and technology skills, problem solving skills, and critical thinking.

Get Creative Challenge

Design and make a zip wire for a toy!

What is a zip wire? It's a cable or rope put up between two points of different heights, down which a person (or toy) slides.

How to make a zip wire for a toy...

You will need:

- a small toy
- string
- paper
- pens or pencils
- sticky tape
- straws / pipe cleaners (optional)
- plastic cups / yoghurt pots (optional)
- toilet roll tubes (optional)
- any other recycling or craft items to hand (optional)

Did you know?

Conservation engineers working on the Union Chain Bridge have made a real zip wire. The zip wire holds a platform from which the engineers work.

Straws/pipe cleaners/
folded card?

Yoghurt pot/
plastic cup/
cardboard?

Teddy/doll/
Lego figure?

What To Do

- Collect your materials. (Don't worry if you don't have everything on the list.)
- Tie one end of the string onto a secure object, such as a table leg.
- Make a carrier to hold your toy. You could do this out of paper or using recycling.
- Feel free to colour in or decorate your carrier.
- Make the loop which will run down the zip wire. Secure this to your carrier with tape.
- Test your carrier by hooking it onto the string and sliding it down to the other end —does it work? Keep trying if it doesn't work right away!
- If you want to show us what you have made, ask an adult to send a photo to ucb@museumsnorthumberland.org.uk.

Afterwards...

1. Make up a **story** about your toy's zipwire adventures? Write, draw or tell and record it - whatever you prefer.

2. Can you **improve** on your design? Can you make it slide down the string even faster?

3. Write 5 **top tips** for someone else doing this activity.

Get Creative Challenge

Design and make your own recycle-bot!

Parents' FAQ Corner

Q. What questions can I ask during the activity?

Children can show they are learning by answering questions you ask. Here are some suggestions:

- How do you think we could...?
- What would happen if we change/move/add/remove...?
- What is happening to the toy? (answer: the toy is falling down)
- Why is it happening? (answer: gravity pulls it down)
- What would happen if we changed the angle of the slope / made the string all floppy / changed the high point to the other end? Shall we experiment and see?

Q. What if the zip wire doesn't work right away?

Keep encouraging your child to revise their design and try again. An added bonus of this activity is that it can be used to build resilience and perseverance in young people using the engineering loop of assessing the problem - identifying a solution - implementing & testing the solution - evaluating the solution - refining the solution. There is no one right or wrong answer. Encourage children to keep experimenting. Above all, think through the problem first to begin to devise a solution. Remember F.A.I.L. = First Attempts In Learning.

Q. What have we learned?

This activity is a design and technology activity, which broadly helps to develop resourcefulness, problem solving skills, and creativity. It has been designed as a cross-curricular / interdisciplinary resource centred about STEM (Science, Technology, Engineering, and Maths) and inspired by the 'real world' engineering of the bridge. By completing this activity children will have:

- Constructed a zip wire, using their resourcefulness, creativity and fine motor control skills.
- Understood that the toy falls down the slope and towards the floor due to gravity.
- Seen that how fast the toy falls is affected by the angle of the slope: you can speed up the toy's descent by increasing the angle of the slope so it is nearer to being vertical (and the reverse).
- Understood that some tension on the cord is needed to maintain travel.
- Written stories and/or top tips for others, the latter showing empathy for fellow learners.

Q. What can I do next?

- More learning and outreach activities can be found on our website: www.unionchainbridge.org.
- If your child enjoyed this activity, he or she might be interested in the following careers:

Systems Engineer

Robotic Technician

Design Engineer

Go to www.nustem.uk/primarycareers for more information on these careers and more.

- If making the zip wire inspires you, why not take a trip outside? There is plenty of space at Paxton House to do your Daily Mile and their play park has a real zip wire for children. To find out more, please visit: www.paxtonhouse.co.uk.