

3 BILLY GOATS GRUFF ACTIVITY

TO DO:

The Three Billy Goats are going to build a sturdy bridge that helps people cross the river quietly and allow the Troll to get some sleep!

Can you design a bridge that holds all three Billy Goats for 30 seconds without collapsing or groaning? It must be longer than 40cm.

ACTIVITY INSTRUCTIONS: WHAT WILL CHILDREN BE DOING?

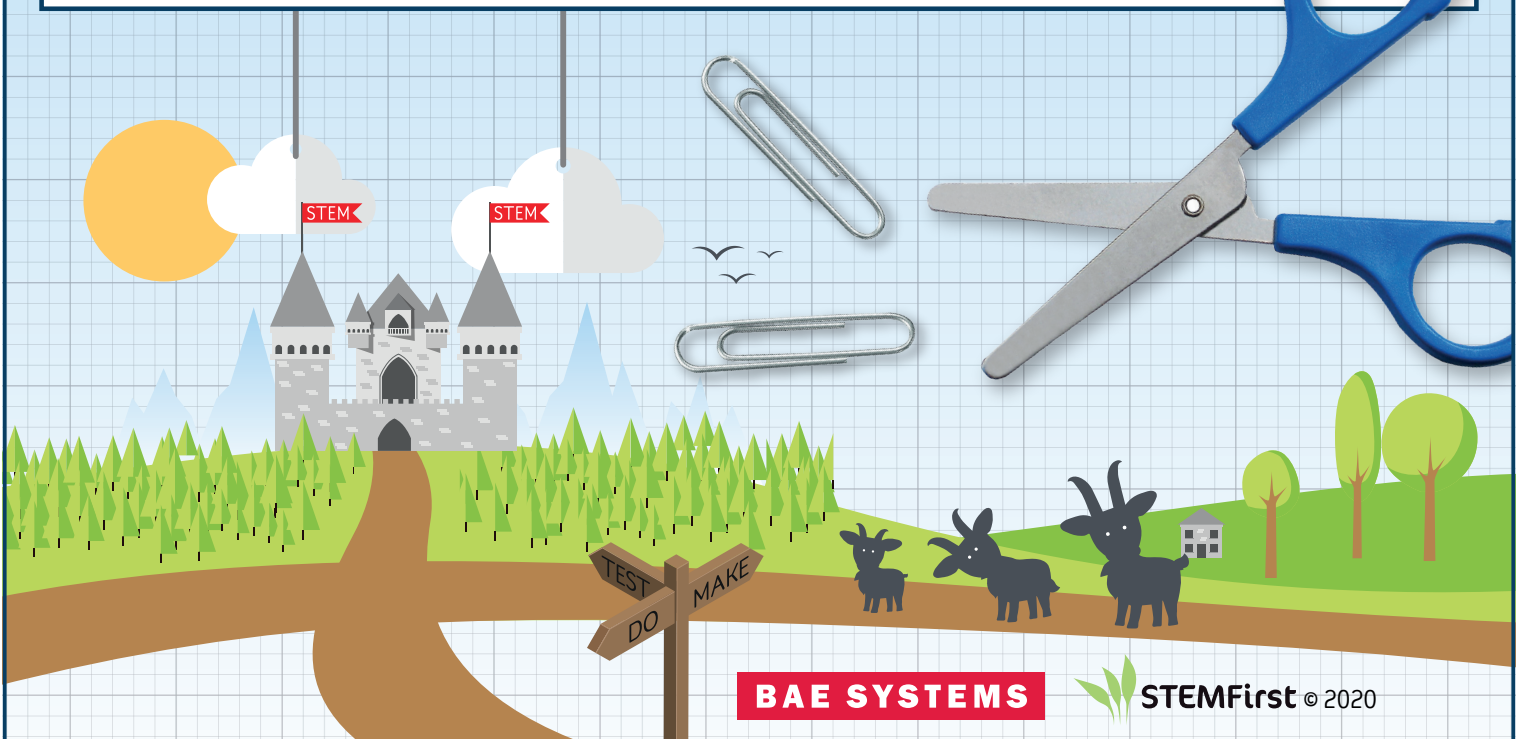
In this activity, children will act as engineers in order to help the three Billy Goats build a bridge. The bridge needs to be 40cm long to cross the river and be strong enough to support three soft toys.

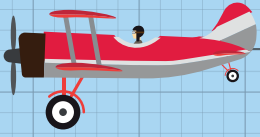
- Help children identify the problem to be solved. Think about what is making the Troll grumpy, and how the new bridge will help. Talk about some ideas and then start designing a solution!
- Build, test and improve a design and then allow the children to demonstrate how their design works. They are now working just like real engineers!

RESOURCES:

You could use the following for this challenge. Remember, these are just suggestions – just use whatever you have available.

- Three billy goats. These could be three soft toys or three wooden blocks. Anything that isn't too heavy!
- Tape
- Lolly sticks
- Card or paper
- Paper clips
- Egg box
- Scissors
- String
- Plastic / paper cups
- Markers / pens
- A 40cm wide piece of paper to represent the river.





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STEM IN THE STORY:

Can you make a list of everything that needs improving on the bridge?

HELPFUL HINTS:

What could you do with paper to make it stronger? Try folding or rolling – what happens?

Need inspiration? Then look at our STEM Ambassadors examples!

TALK TO YOUR LITTLE ENGINEERS ABOUT:

What problem needs to be solved?

What does the Troll want? What do the Goats want?

What do you think will happen if you.....?

Tell me about your design. What things did you have to think about?

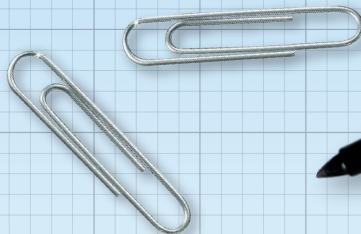
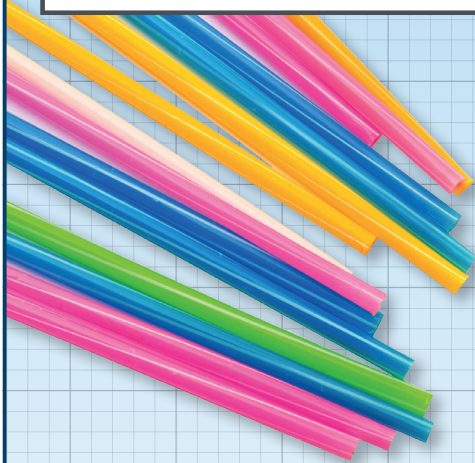
FOLLOW ON ACTIVITY:

Investigate bridges. Have a look at their shapes – is there anything you notice?

Try making the longest bridge you can using just 5 sheets of A4 paper and some tape? Measure it!

Challenge someone else to make a longer one!

Civil engineers build bridges and you have the skills to be one in the future!



TAKE CARE:

In all of these activities please make sure you are working safely. Please have fun but supervise your children to make sure your environment is safe and you take care with any craft equipment or materials you are using. Engineers and Scientists always do!

