

The National Literacy Trust has teamed up with real-life engineers Mott Macdonald who have set you a series of exciting challenges.

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But first... what is an engineer?

Engineers want to know how and why things work.

Engineers design and build products, machines, systems, or structures, like airplanes, buildings or computers.

Engineers have scientific and mathematical training to help them make things.

Engineers specialize in a specific area of engineering like civil, environmental or chemical.



Bridges: isolation style!

Real-life engineers Mott Macdonald have set you your first challenge: **build a bridge**.

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Read *Staying Home*, by Sally Nicholls and Viviane Schwarz.

Emily, Harry and Charlie practice social distancing by staying 2 metres apart from their friend Hakim. When all is well again, they will want to be able to get to each other.

Can you help them by building a bridge to cross so that they can be reunited?



How to make your bridge

STEP 1: Take two chairs and place them 2 metres apart

STEP 2: Create a bridge out of any materials you can get your hands on

STEP 3: Connect them with tape, glue, cling film etc.



Pirates Ahoy!

Ahoy me hearties! It's time to hoist the Jolly Roger, gather your crew and go hunting for treasure.

Real-life engineers Mott Macdonald have set you your second challenge: **build your very own pirate ship.**

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To help get you in the pirate mood, complete these activities by opening the links:

STEP 1: [Design your own flag and invent your shipmates](#)

STEP 2: [Design a treasure map of your home, and go hunting for treasure](#)

Can you build a pirate ship out of things you can find at home? See if you can transport your shipmates and treasure across your bathtub or sink.

What should you think about?

- What materials float? You may have materials in your recycling bin you could use, like a yogurt pot or a plastic bottle.
- What could you use as a sail? A plastic bag could be used, or even your flag that you have designed.





Den-gineering!

Real-life engineers Mott Macdonald have set you your third challenge: **build a stay at home reading den.**

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To inspire you, watch author Jon Scieszka read his version of *The Three Little Pigs* on YouTube.

Can you build your very own den to read and play in?

Top tips for den construction

- Use whatever you have in the house. Chairs, bed sheets, pillows and blankets are particularly handy!
- At least one person should be able to sit inside the den, when it is safe to do so.
- The den should stay upright without someone holding it.

This is your space for reading, snoozing, drawing or inviting aliens for tea!

Will your den have a magic password?

How will you decorate the inside?





Into Space!

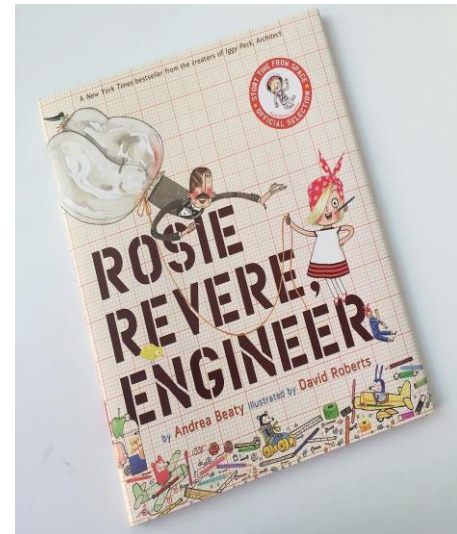
Real-life engineers Mott Macdonald have set you your fourth challenge: **create a rocket and launcher.**

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Watch an online reading of *Rosie Revere, Engineer* by Andrea Beaty and David Roberts. This version is read by a real life astronaut, Kate Rubins... in space!

Rosie Revere dreams of being an engineer and flying into space.

Did Rosie manage to build her flying machine?
What lessons do we learn from Rosie?



Can you create your own rocket and launcher? Have a hunt for materials which you can use to help, like balloons, straws or bottles.

What should you think about?

- What materials would make a good rocket and why?
- If you were traveling to space, what would you bring with you in your rocket and why?

What is a rocket?

A rocket is an engine that lifts things into space.

