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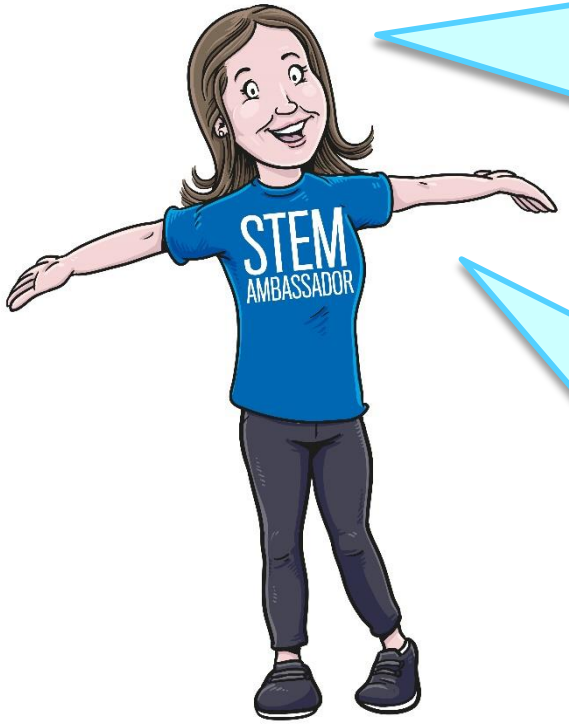
Mobil Esso Mobil 1

February 2021 – Spring Term

#SolveItWithSTEM@Home Infant and Primary Activity Pack

Friday 19th February 2021

Hello everybody!



Welcome back everybody…I do hope you are enjoying the half term break!

Last week we focussed on **Colour** – did you enjoy it? The Rainbow Science experiment looks really fun. The fun colour by calculation which Eddie provided was pretty cool too!

This week we turn our attention onto **Movement**…now Eddie is trying to lift this weight and move it above his head…do you think he will be able to?…

…this week we have some really exciting movement based activities! We do hope you enjoy creating them.

Remember everybody you can share these packs with your family and friends online – just visit www.fawleyonline.org.uk

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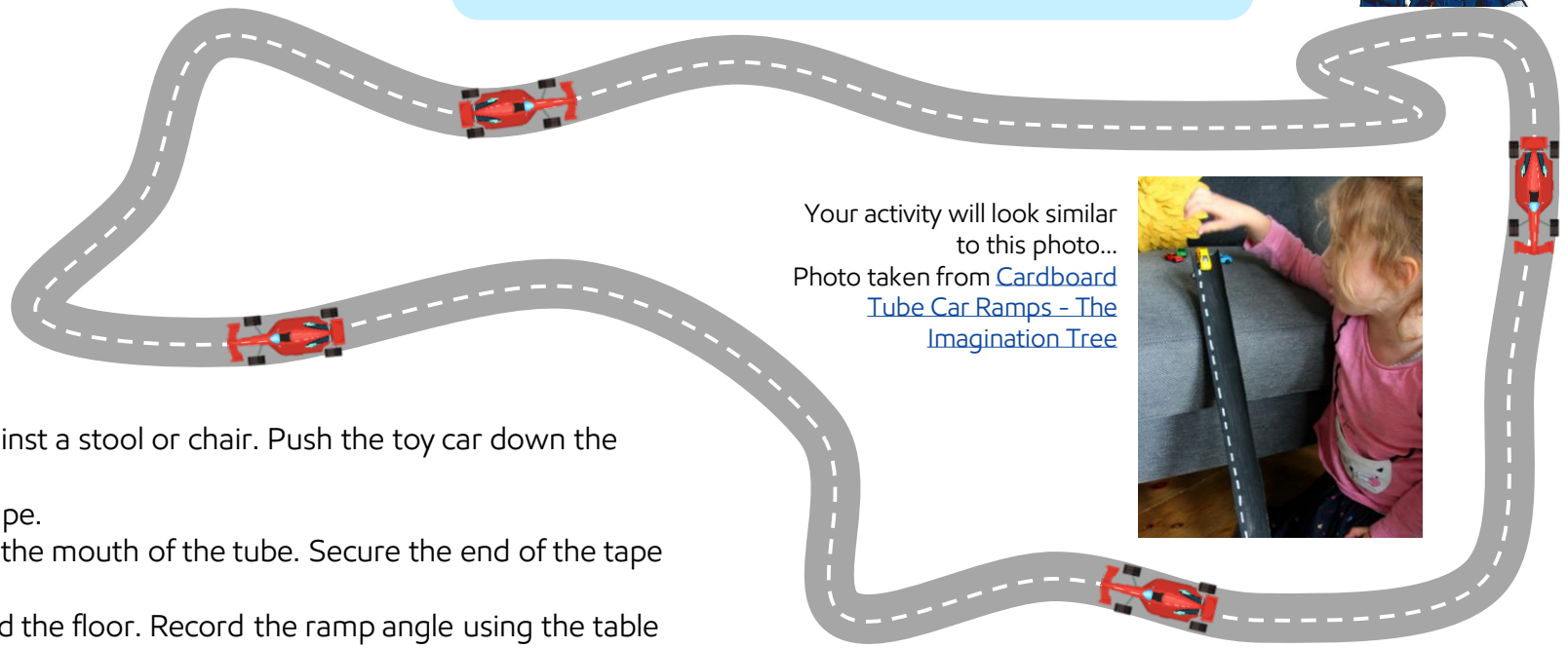
Activity: Racing to measure

(Make sure you have an adult help you with this activity)

If you send a toy car down a ramp, at what ramp angle will the car travel the farthest when it hits the ground? Get out your protractor and your tape measure to find out...

Materials:

- Cardboard tube from an empty roll of wrapping paper
- Stool or chair
- Small toy car
- Protractor
- Tape
- Tape measure
- Use the table and graph supplied on Slide 4



Your activity will look similar to this photo...
Photo taken from Cardboard Tube Car Ramps - The Imagination Tree

Steps:

1. Set up the cardboard tube on a smooth floor at an angle against a stool or chair. Push the toy car down the tube to make sure it works.
2. Secure the bottom of the cardboard tube to the floor with tape.
3. Place the tape measure on the ground with the number 0 at the mouth of the tube. Secure the end of the tape measure with tape so that it stays in place.
4. Use a protractor to measure the angle between the ramp and the floor. Record the ramp angle using the table provided on slide 4 – you can print this out or copy and create a similar one.
5. Send the car down the tube and record the distance travelled on the table provided. (You can send it down several times at the same angle and calculate the average distance it travels for better accuracy)
6. Adjust the angle of the ramp by moving the stool. Record the angle and send the car down the cardboard tube and record the distance. Keep doing this until you have recorded about 3 or 4 different angles and distances.
7. Use the graph on slide 4 to plot each race – you can create your own measurement scales on each axis depending how far and what angles you used.

Observation
What does your graph look like?
What ramp angle makes the car travel the farthest on the ground?
Does this surprise you?

The How's and Whys
The car traveling down a ramp will build up more speed at a steeper angle than it will at a shallow angle. However, once the ramp gets too steep, the car will have a hard time exiting the chute smoothly, so it won't go as far.

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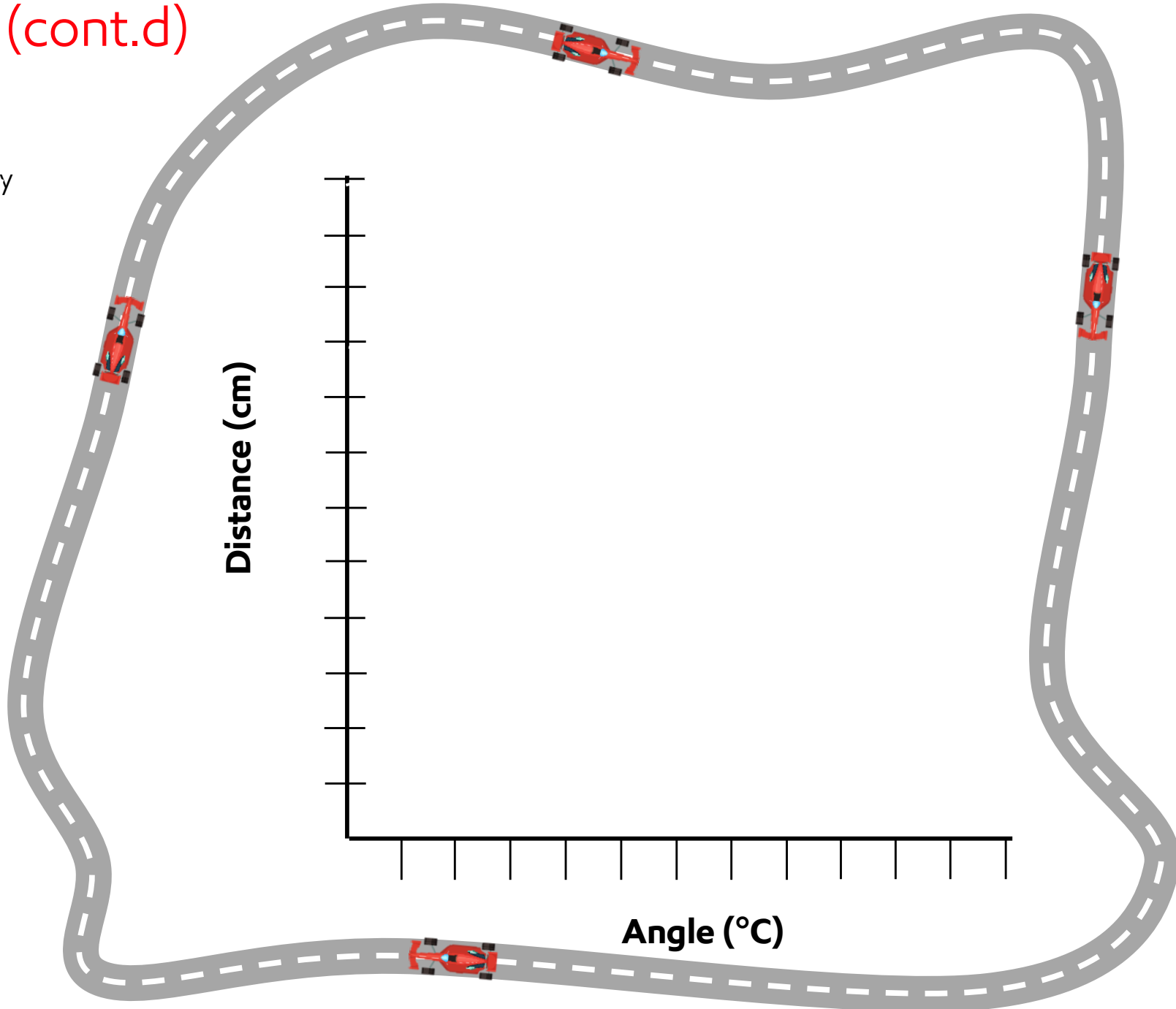
Activity: Racing to measure (cont.d)

Use the table below to record your findings.
If you would like to complete more races, use the empty boxes below.

	Ramp angle (°C)	**Distance travelled (cm)**
Race 1		
Race 2		
Race 3		
Race 4		



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Experiment: Flying ghosts

(Make sure you have an adult help you with this activity)

Items Required:

- Tissue or toilet paper
- Black felt tip pen
- Scissors
- Party balloons

Instructions:

1. Using the scissors, cut out a ghost shape in the tissue paper (approximately 4cm long).
2. Use the black felt tip pen, draw a ghost face. Lay the ghost down on a flat surface.
3. Blow up the balloon and tie the end.
4. Rub the balloon really fast through your hair for about 10 seconds. This will add a static charge.
5. Slowly bring the balloon near the ghost, and the ghost will begin to rise toward the balloon. If the balloon is charged enough, the ghost will rise and float right up to the balloon, even when it is several inches away. With a little practice, you can get the ghost to rise, float and even dance around.

How does it work?
When you rub the balloon through your hair, invisible negative charges build up on the surface of the balloon. The negative charges have the power to pull very light objects (with a positive charge) toward them – in this case, the tissue ghost!
Static electricity is what makes us sometimes give or receive a small shock from another person...

This experiment was taken from:
[Make A Static Powered Dancing Ghost - ScienceBob.com]

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Maths: How fast can you run?

How many miles per hour can you run?
Do you think you could guess how fast? Shall we try and work it out together? Well let's head outside and see!...
Get your parent or guardian to help you with the calculations as it may get a little tricky...

Items required:
- Tape measure
- Stopwatch
- An outdoor area or enough space for you to run safely
- Paper and pen
- Calculator

Steps:
- Head to an outdoor area or place where you have plenty of space to run safely. This could be outside in the garden or on a long driveway. If you are heading outside and in a public area, please remember to socially distance. Please ensure an adult is with you...we will need their help shortly!
- Use the tape measure and measure the distance you will be running in feet. At this stage get your parent or guardian to help hold the measuring tape. 45- 60 feet is probably good distance.
- Ask your parent or guardian to use the stopwatch and time how many seconds it takes you to run the distance you've set. Write it down.
- **You may want your parent or guardian to help with these calculations** - divide the distance by the time so you have a speed in foot/second. Convert your speed to miles /hour by multiplying by 3600 and dividing by 5280.

Observation
Time yourself running this distance several times. Does your speed change with each trial? Why? Can you maintain this speed while running longer distance?

How's and Whys

Speed is a distance travelled per unit of time, or a measure of how fast something is moving. In this experiment, you convert from a speed measured in feet per second to a more relatable speed in miles per hour. Multiply by 3600 to convert from seconds to hours because there are 3600 seconds in an hour. Divided by 5280 to convert from feet to miles because there are 5280 feet in a mile.

We hope you enjoyed this week's activities.

Another pack will be on its way to you next week…

Best wishes
The ExxonMobil Fawley #SolveItWithSTEM Team!