

ELSA (Early Learning STEM Australia)



A series of play-based digital apps linked to the EYLF and the Australian Curriculum: Foundation, to engage Pre-School children in foundational STEM practices, and build the capacity of early learning educators. (F-2 current development of new digital apps is in progress)

<https://elsaprogram.com.au/>

Let's Count



Funded by The Smith Family. An early mathematics program for children aged 3-5 aligned with the EYLF. The program supports educators and parents to develop mathematics skills in children by noticing, exploring, and discussing mathematics using everyday activities.

<https://www.thesmithfamily.com.au/programs/numeracy/lets-count>

Little Scientists



Supports early childhood educators to build their skills and confidence to understand STEM ideas and concepts. (Supports with inquiry-based learning activities, using everyday materials with Preschool children).

<https://littlescientists.org.au/resources>


Explore STEM at home (Department for Education: South Australia)




Government of South Australia
Department for Education

Developed by the Department for Education, South Australia, the resources provide parents and educators with STEM inquiry learning experiences to encourage exploration and solving problems through wonder and play.

<https://www.education.sa.gov.au/students/curriculum-and-learning/stem-learning/explore-stem-home#stem-at-home:-early-years>

<p style="text-align: center;"><u>Materials:</u></p> <ul style="list-style-type: none"> • A large jar (it can be plastic) • Shaving cream (not a gel version) • Food colouring • Pipettes or droppers 	<p style="text-align: center;"><u>Method:</u></p> <ol style="list-style-type: none"> 1. In a small cup, mix the food coloring with some water. 2. Fill the large jar with water until it is about 3/4 full. 3. Place the jar and the cups of coloured water on the table. Place a pipette in each cup of colored water. 4. Right before the children are ready to do the experiment, spray a bunch of shaving cream in the jar until it is just a small bit above the top of the jar.
<p style="text-align: center;"><u>Inquiry:</u></p> <p style="text-align: center;">What I think will happen.... What I observed.... What I learned....</p> <p>Ask the students to pick up some coloured water with a pipette and squirt it on top of the shaving cream cloud. Repeat this step one or two more times, but pay close attention to what is happening below the cloud!</p> <p>The coloured water will begin to seep down through the shaving cream and into the water below. Just like rain!</p>	 <p style="text-align: center;">Rain Cloud in a Jar Science Experiment</p>

<p style="text-align: center;"><u>Materials:</u></p> <ul style="list-style-type: none"> • Oil (vegetable) • Water • Sponges • Paper towels • Feathers • Spoons 	<p style="text-align: center;"><u>Method:</u></p> <ol style="list-style-type: none"> 1) Mix oil and water in a large container and add a few 2) Pass out materials like sponges, paper towels, or little spoons and instruct the children to try to remove the oil from the water and feathers.
<p style="text-align: center;"><u>Inquiry:</u></p> <p style="text-align: center;">What happened?.... Where could it go?.... What could it affect?.... What harm could it cause?... What can be done to help?....</p> <p>Have the children try to remove the oil without removing too much water. You can use this activity to show how oil spills can affect the environment, letting them observe how the oil affected the feathers and how difficult it was to remove it from the water. The basic elements of this activity (mixing oil and water) make it easy for the learning level to be scaled up or down depending on the child's age—oil can obviously be messy, so use your discretion with younger learners.</p>	 <p>The image shows a hands-on STEM activity titled "STEM: Oil Spill Clean-Up". It depicts a person's hands using a spoon to scoop a dark, oily substance from a shallow tray. The tray contains a mixture of water and oil, with a green feather partially submerged. A clear plastic cup is nearby, likely used for collecting the cleaned water. The background is a solid blue color.</p>

Materials:

- Two pieces of thick cardboard (which could be backed onto a thicker board for durability)
- Collection of objects to animate
- Smartphone or iPad
- Free stop motion app (any selected free ones from the App Store)

Method:




- 1) Set up a backdrop. This could be a wall or thick cardboard
- 2) Gather toys to include in your animation.
- 3) Set up your iPad or smartphone on a stand or tripod, across from the thick cardboard.
- 4) Start the Stop Motion Animation App and make your movie

Inquiry:

I wonder what would happen if?.....
How do living things survive in this environment?
What is the environment?
I wonder how...?

To make it work, you place an object in front of a camera and snap a photo. You then move the object a tiny bit and snap another photo. Repeat this process twenty to as many times as the students like to tell a story. Play back the sequence in rapid progression, and the object appears to move fluidly across the screen.



<p style="text-align: center;"><u>Materials:</u></p> <ul style="list-style-type: none"> • Pipe cleaners • Paper • Pen • Glue • Beads 	<p style="text-align: center;"><u>Method:</u></p> <ol style="list-style-type: none"> 1) Begin by folding a piece of paper around one end of each pipe cleaner and fixing it in place with a swipe of your glue stick. 2) Depending on the age of your child and their skill level, write a number on each piece of paper.
<p style="text-align: center;"><u>Inquiry:</u></p> <p>How could you sort these...? What happens when we....? What can be made from.....? Can you see a pattern?.... What have you discovered?....</p> <p style="text-align: center;"><i>This STEM Maths inquiry is flexible enough that teachers can cater it to suit their students' needs and skills.</i></p> <ol style="list-style-type: none"> 1) <u>Ordering numbers:</u> <ul style="list-style-type: none"> • Invite students to place the pipe cleaners in numerical order (counting and checking) 2) <u>Number formations:</u> <ul style="list-style-type: none"> • Students can trace their finger over each number to focus on the features of each number 3) <u>Making numbers:</u> <ul style="list-style-type: none"> • Students can thread the correct number of beads onto the end of 	<div style="text-align: center;">1) </div> <div style="text-align: center;">2) </div> <div style="text-align: center;">3) </div> <div style="text-align: center;">4)</div>

each pipe cleaner

4) Fine motor development:

- Counting beads on pipe cleaners supports fine motor skills

