



THE
ENGINEER'S
DUCK

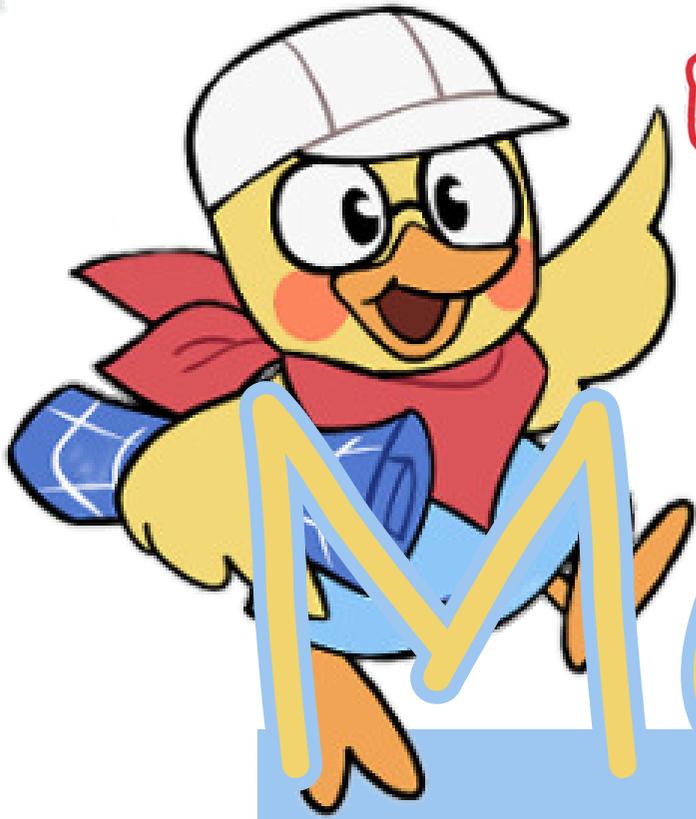


TED-e
ACADEMY



Engineering Activities and Science
Experiments for kids just using
household items

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Module

A01





Nature

Scavenger Hunt

Duration: 20 minutes

Difficulty: 





List items for kids to find outside, such as leaves, rocks, or insects, and discuss their characteristics.

Hypothesis: There are lot's of interesting things outside with different characteristics.

Expected Outcome: A list of multiple unique items with differences.





Engineering Requirements

What you'll need

- Piece of paper
- Something to write with
- Walking shoes





Engineering Design Instructions

1. Plan your route (e.g. backyard, by the tree, in the park, back home)
2. Draw a table with 2 columns.
3. Walk and write down an item you see and note at least one characteristic
3. Repeat until you get back home





BUILD AND TEST

Go and do the experiment!

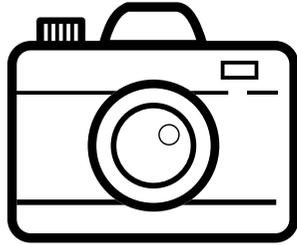


Conclusion and Outcomes

How many items did I see?

Did the items have different
characteristics?





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Picture Time

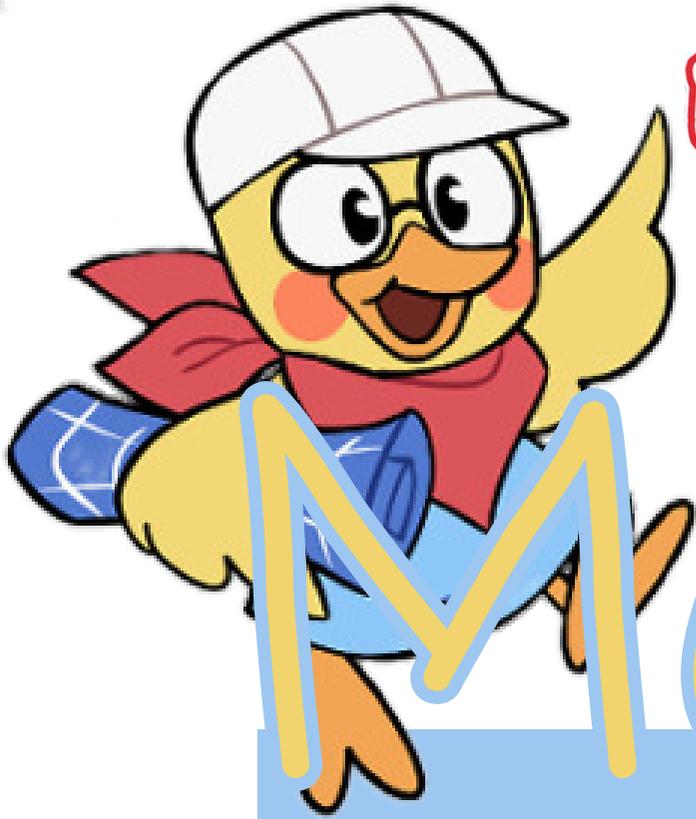
Well done finishing this engineering activity!
Now take a photo of your achievement and share it
on social with #engineersduck or submit it to
tede-academy@engineeringinreallife.com with
M01A01 and the photo to receive your completion
certificate!!



A01



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Module A02





Shadow Art

Duration: 5 minutes

Difficulty: 





Use sunlight and objects to create shadows and trace them on paper, exploring the concept of light.

Hypothesis: Shadows get smaller and bigger when I'm closer or farther from the light source.

Expected Outcome: Shadow tracings of objects closer to the light source is bigger.





Engineering Requirements What you'll need

- 2x Piece of paper
- Something to draw with
- Some objects to make shadows (like your toy!)
- A light source, e.g. the sun or a light at night time





Engineering Design Instructions

1. Place the 1st piece of paper in front of the light source
2. Place your item in between the light and the paper
3. Trace the shadow on the paper
4. Place the 2nd paper on top of the 1st.
5. Move the item closer to the 2nd paper
6. Trace the new shadow on the 2nd paper





BUILD AND TEST

Go and do the experiment!

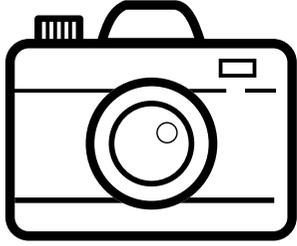


Conclusion and Outcomes

Are the shadows different sizes?

Did the shadow get smaller or bigger when moving the item closer?





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Picture Time

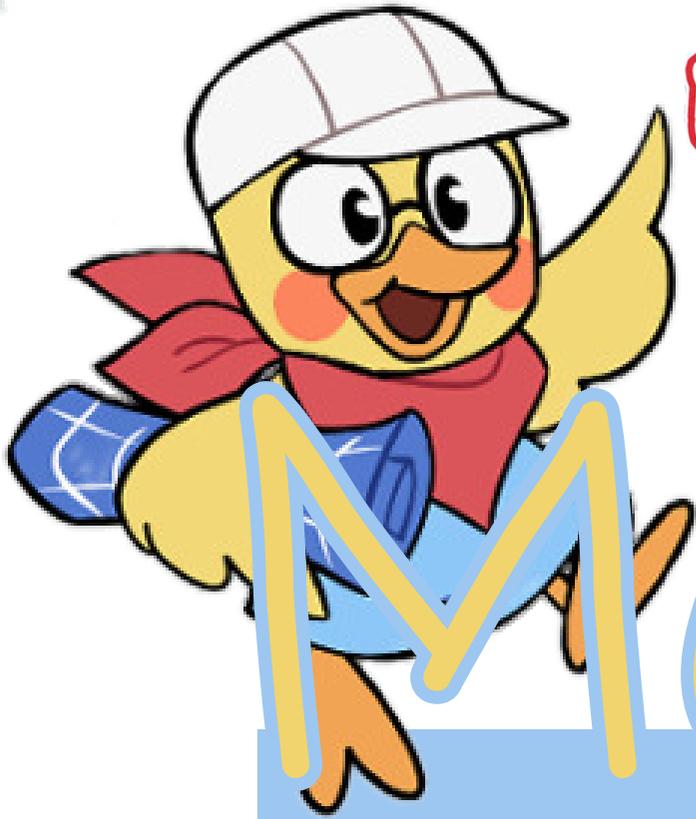
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A02



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Module

A03





Sink or Float Test

Duration: 10 minutes

Difficulty: 





Gather small objects to test in water and predict whether they'll sink or float. Explore density and buoyancy

Hypothesis: Lighter objects are more likely to float on water than heavier objects.

Expected Outcome: Some objects will float and some objects will sink.





Engineering Requirements What you'll need

- 1x Large bucket or bowl
- At least 2 heavy objects
- At least 2 light objects
- Access to a tap for water
- Something to write your results on





Engineering Design Instructions

1. Fill the bucket or bowl with water
2. Draw a table with 2 columns
 - Column 1 = name of object
 - Column 2 = Sink/Float Prediction
 - Column 3 = Sink/Float Actual
3. For each object
 - predict if it will sink or float and write in column 2
 - place the object in the water and observe
 - write down if it did sink or float in column 3





BUILD AND TEST

Go and do the experiment!

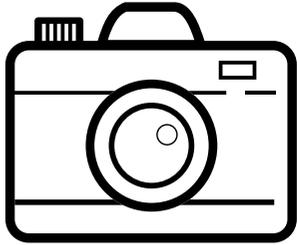


Conclusion and Outcomes

Did the heavy or light items float?

Did the heavy or light items sink?





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Picture Time

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A03



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TED-e ACADEMY

CONGRATULATIONS

You've completed Module A of
TED-e Academy!

With all 3 activity certificates from
module A, you can request a special
certificate!

