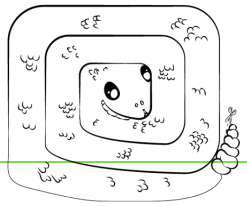
FORCES MAGIC SHOW



Grades K-8

EXPERIMENT WITH INVISIBLE FORCES

K-8: Students explore and discover static electric forces through hands-on experimentation.

IA ORANA!
5 min

Ia Orana is Tahitian for hello! (pronounced ee-ah oh-rah-na)

Greet your students. Be friendly. Use their name, ask a question, give a high five, or thumbs-up! Take roll. Mark down which students took a snack and tally how many snacks were given out.

SNACK/FREEPLAY
30 min

Enjoy free play:

Students enjoy playing outside and eating their snacks.

STORY TIME
15 min

Read the story:

Read to your students outside as they sit in a circle. Older students may choose to read their own books during this time.

STEM TIME
50 min

K-8 Experimenting with invisible forces!

Say: Students today we get to have fun experimenting with some interesting invisible forces! Remember the word force means a push or a pull. We push and pull things all the time but can you think of something that can cause an invisible push or pull? (let students think of the answers)

Explain: Magnets and static electricity can both cause an invisible push or a pull.

Materials:

- Plastic wands (PVC pipe from Stomp Rocket Koa)
- Magnets (Various types)
- Paper - students cut/rip to make confetti
- Optional: Pepper, spices
- Scissors
- Crayons, colored pencils
- Worksheets

Instructions:

1. Show students the in-class video. They will be trying this same experiment but with a piece of paper.
   - K-3rd grade: Younger student video https://www.youtube.com/watch?v=m1Fxku_Ywks
   - 4-8th grade: Older student video. *If students are together then show the younger student video to the group and save the older student video for later on in the activity. https://www.youtube.com/watch?v=CHGaMutanKE

2. Pass out the wands - you can tell them they can pretend they are at Hogwarts today and we are going to be learning how to use their wands to do some magic.

Say: Here is your first challenge. Cut out this paper snake or get an empty can and use a plastic wand or balloon to make it move without touching it?

3. Have students cut out their paper snakes and color them as desired.
4. Have students experiment to figure out how to get the item to follow their wand. *Don't give them the answer but let them try a lot of things.

5. Once they figured out how to rub their plastic wands on fuzzy clothing to build up an electric charge. Challenge them to see if some materials in the room can charge their wands better then other materials.

Say: Does fuzzy clothing work best to charge your wand? Carpet? Blue jeans or cotton shirts? Go around the room and see what material works best.

6. Find another material around the room to use as a wand to attract something?

Ask: Is there something else that could work for a wand? Try some things!

K-8 Static electricity magic show

Challenge students to create their own experiment to try or creative magic show with the new things they have learned about. We showed them a paper snake and a pet can, what ideas can they come up with? They can use paper or any other material in the class to make and then film their own magic show. Allow students to showcase their inventive ideas with their peers. Sometimes students are shy so as the STEM coach go around and compliment and show off the ideas students are coming up with as this can help others think of ideas. Some students might want to work alone and some might want to work in groups.

SPORTS/GAMES

25 min

*Older students may practice their sport if they don't want to play the game.

Materials:

- A small object such as a plastic animal or beanbag
- Playing area with places to hide the object (example: classroom, playground with equipment)

Huckle Buckle Beanstalk

Objective- An object will be hidden. Students will then walk around the area to find the object. When they find the object, they will go sit down and say Huckle Buckle Beanstalk to let others know they have found it, without giving away where they found the object.

Instructions- Choose one student to hide the object. It can be hidden high or low, easy or more difficult, but it must be hidden in a place that can still be seen if someone is near it (not fully enclosed or covered). While this student is hiding the object, all other students will be in a designated area, such as their seats if in a classroom, or outside along a line. They will have their eyes closed and be facing away from the hiding area. Once the STEM coach says so, the students may open their eyes and begin hunting for the object. When a student finds the object, they must then go sit down. Encourage students to continue to pretend to look for another 5 to 10 seconds after finding the item, so it will be more difficult for others to know where the object was found. Once sitting, they call out, “Huckle Buckle Beanstalk!” to let others know they have found the object without giving away its location. The game continues until everyone has a turn to find the object. If the students are taking a long time to locate the item, the instructor can help to give hints by stating if they are “hot” or “cold.” The closer to the item, the hotter they are, the farther they are means they are cold. STEM coaches may allow students to play multiple rounds, and have different students chosen to hide the object each time.

HOMEWORK/FREE PLAY

20 min

Instructions:

Allow your students some homework time. If they need help let them know you can help them. If they do not have any homework they can have some reading time, or they can have free time to go outside and play.

CLEAN UP/ DISMISSAL

5 min

Clean up/pack up/dismissal

Clean up, pack up and head home.