



Experts in Hands-On **STEM** Education

STEAM Sprint Showdown





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Activity 1: Hidden Talent Relay

You can't spell STEAM without TEAM! A successful team plays off one another's strengths. It's up to teammates to discover everyone's unique skills and make the most of them. In this challenge, each learner will put their attributes to the test during a hidden talent relay! Be silly and have fun! You never know what skills can lead your team to victory.

Materials:

- Stopwatch

Instructions:

1. Choose your category.



2. Which task will you complete? Wait for your educator to let you know what each teammate will do in the relay.
3. Racing simultaneously or one after the other, you and your team will complete each task one at a time. The team with the fastest time wins!

Discussion Questions:

- What is something new you learned about yourself or your teammate(s)?
- How can discovering teammates' hidden talents be helpful when working together to achieve a goal?

Activity 2: Paper Bag Challenge

You're likely to find that the world's greatest scientists, engineers, artists and mathematicians enjoy a bit of creative freedom. It's that thrill that comes from thinking beyond boundaries and trying something new that inspires innovation. In this challenge, work with your team to embrace the spirit of creativity. Let your imaginations run wild and craft a one-of-a-kind masterpiece.

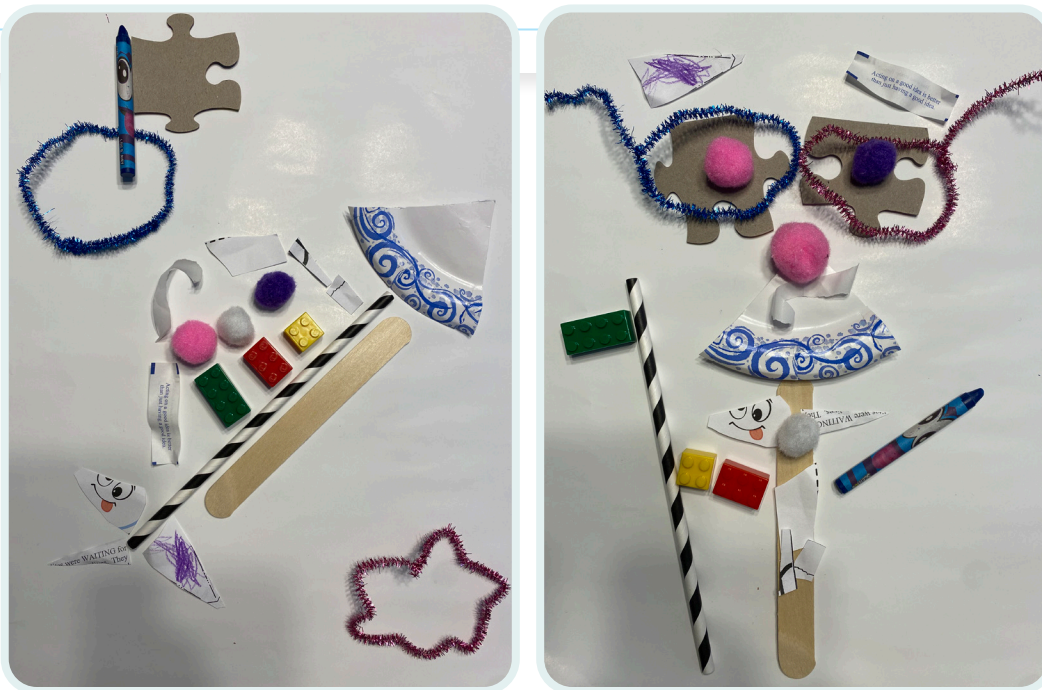
Materials:

- Paper bags filled with a random assortment of items

Instructions:

1. Using only the materials provided, work with your team to create an artistic masterpiece! Be creative.

Take a look at these examples:



Discussion Questions:

- Which masterpiece was your favorite?
- Did the designs represent anything?
- Did any of the designs show symmetry?

Activity 3: Under Pressure

What would happen if you blew a steady stream of air over a strip of paper with the far edge drooping down? At first, you might expect the air to push the paper even lower. Go ahead and experiment! You're likely to find that the paper strip does something fascinating. Engineers have taken advantage of this surprising phenomenon to design things as large as airplane wings and as small as ping pong balls.

Materials:

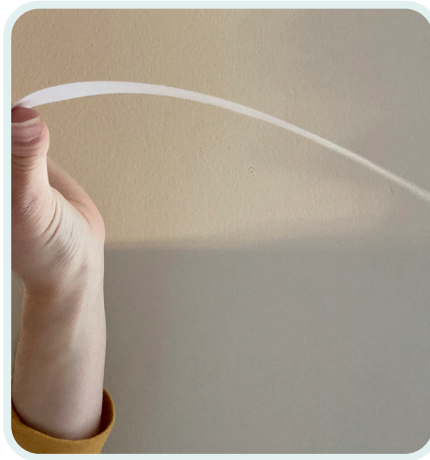
- Strips of paper (one per participant)
Paper length may affect difficulty level
- Unsharpened pencil or marker

Instructions:

1. Have learners hold the top of their paper between their thumb and pointer finger and let it hang straight downwards. Ask them to observe what happens when they blow over the top of their paper strip (it should lift).



Without Air



With Air

2. Learners balance an unsharpened pencil (or marker) over the edge of a desk or table so that half of it is suspended.
3. Using only the strip of paper from their position beneath the pencil, participants have 60 seconds to push their pencil fully onto the table. If they push it off the table, they may reset the pencil and try again.

Discussion Questions:

- What tips would you give others to help them succeed in this challenge?
- Did the paper move in the way you expected? What factors might have caused it to move that way?

Activity 4: Letter Linkers

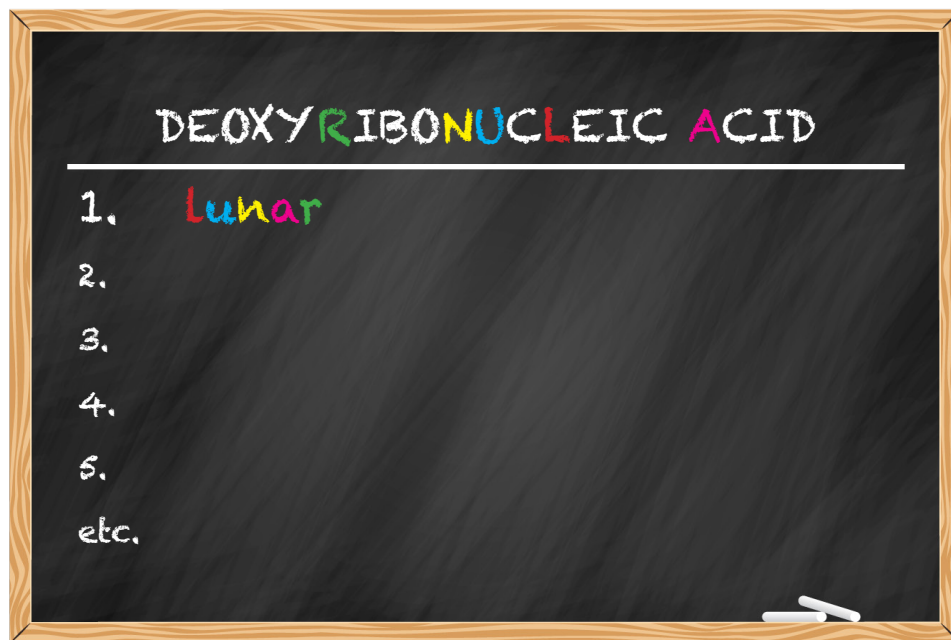
Have you daydreamed about transforming into your favorite animal? You shouldn't get your hopes up for sudden tail growth or a scaly makeover, but the connection between you and that animal is more than skin-deep! All living organisms share the same basic genetic code called DNA (deoxyribonucleic acid). Just like the 26 letters in the alphabet come together to form millions of different words, the four bases of DNA combine to form different proteins. These combinations give everything their unique traits and characteristics.

Materials:

- A writing implement and tool to write on (e.g., paper and pencil, marker and whiteboard)

Instructions:

1. Your team has a set time to list as many three or more letter words as possible using only the letters in "DEOXYRIBONUCLEIC ACID."
2. The team with the greatest number of three or more letter words wins!



Discussion Questions:

- What strategies did you use to come up with new words from the given letters?
- Did you find any patterns or rules that helped you generate more words from the given letters?
- How did you communicate with others to share your ideas and contribute to the collective word pool?

Activity 5: Rapid Trivia

Answer: This media format is believed to have first debuted on American television in 1941.

Question: What is a quiz show?

Did you correctly answer the *Jeopardy*-style question? Whether for the pursuit of knowledge or the flashy prizes, game shows have been entertaining audiences for generations. In this fast-paced activity, you'll play both host and contestant as your team competes to answer questions correctly. Think fast and have fun!

Materials:

- A list of five questions per player (learners develop their own questions).

Instructions:

1. Have every teammate individually brainstorm five questions about a STEM topic recently discussed in class. Review your list of questions. Ask yourself, *"Could I answer this question correctly if someone asked it of me?"* If you do not think you can answer, do not use the question.
2. Teams should sit in a circle, each player with a written list of questions. This game is meant to move quickly, so take a moment to read through your list of questions before time starts.
3. Follow the rules of the game below.
 - If you ask a person a question and they answer correctly, it is their turn to ask a question. They turn to the person on their right and ask the next question.
 - If you ask a person a question and they answer incorrectly, you may ask the next player the same question.
 - If someone answers two questions incorrectly, they are out of the game.
4. The team with the greatest number of players still in the game when time is up wins!
 - Tiebreaker: The team with the greatest number of correct responses.

Discussion Questions:

- How did you ensure that your questions were clear and understandable for your teammates?
- How did answering your teammates' questions contribute to your understanding of the STEM concept(s)?



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