

Dragon Linkages

Best for Ages

6+

Workspace

Flat indoor surface

Is electricity required?

No

Description

Transform craft sticks into a moving, mechanical dragon!

Materials

- 12 Craft Sticks
- Hole Punch or Crop-A-Dile punch
- 10 Metal Brads
- Construction Paper
- Googly Eyes
- Masking Tape
- Scissors

What to Do

1. Using the hole punch or crop-a-dile, create four holes on each craft stick.
2. Start with two craft sticks. Place one craft stick on top of the other. Do any holes align?
3. Make an "X" with your two craft sticks. Place a brad so that it goes through one hole on both craft sticks.
4. Now, move the craft sticks to see how the brad affects the motion. Does it move how you expected? Do you like that movement? If not, test out a new movement by putting the brad through different holes in your craft sticks.
5. Once you've found a movement you like, repeat the first three steps with 3 new sets of craft sticks and 3 brads.
6. Now it's time to connect all 4 "X" formations. Place your "X" formations end to end, overlapping the holes where the "X" meet.
7. Test out your linkages! What happens when you move the craft sticks on the first "X"?
8. Now let's make it a dragon! Add construction paper and googly eyes to bring your linkages to life!



Concepts Explored

- Chain Reactions
- Motion and Forces

Dragon Linkages

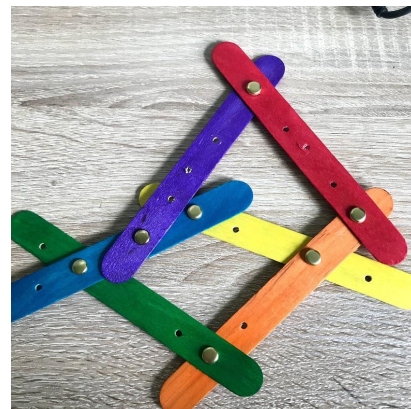
Troubleshooting Tips

- I want my dragon to be longer/taller/wider:

Add more craft sticks and brad "X" formations to the top, sides and bottom.

- I need more sticks!

Find craft sticks or make cut cardboard strips to make more. Add holes using a hole punch.



When you made your first "X", did it move how you thought it would?

How could you change your dragon to make it move differently?

What materials could you use instead of brads and craft sticks?

What is Happening?

- This activity is a fun example of a **chain reaction** or a series of events caused by the previous event. Because all of our "X" formations are connected and linked together, when we move the first set of craft sticks, all of the other craft sticks begin to move, setting off a chain reaction.
- The linkages are acted upon by a **force** (your hands pushing and pulling on the sticks) which causes them to move. The type of **motion** the linkages have depends upon the way the sticks are linked together. The motion of each stick causes the motion of the other sticks.

Taking it Forward

- **If you like this activity, you'll also like...**
 - [Chain Reactions](#)
 - [Bernoulli Obstacle Course](#)
- **Learning more about this activity at local library:**
 - *Motion* by Andrea Rivera
 - *All Kinds of Motion* by Jennifer Waters
 - *How do Objects Move* by Laura Sullivan