DESTINATION IMAGINATION®

Exploring Material Properties

Improve Your Team's Instant Challenge Skills

Exploring Material Properties Instructions

These cards are designed to teach your team material properties, creative thinking, teamwork and problem solving skills. Each card contains a set of questions and activities for a specific material.

Get Started

1. Print the following pages double-sided on 8.5" x 11" cardstock paper.
2. Cut each page in half.
3. Gather the material on the cards. 20-25 of each material should be enough to complete all the activities.
4. The icons at the top of each card indicate if scissors or weights, such as pennies or marbles, are needed.
5. Select the material and its corresponding card.
6. Read the first question on the card to your team and give them time to explore the solutions completely. The questions and activities are designed so that solutions can be used in many of the subsequent activities for that specific material.

About Destination Imagination

Destination Imagination (DI) is a non-profit, volunteer-led, cause-driven organization. Our purpose is to inspire and equip students to become the next generation of innovators and leaders. Annually, we offer seven new standards-based Challenges in STEM, Improv, Visual Arts, Service Learning, and Early Learning. Each Challenge is open-ended and enables student teams to learn and experience the creative process from imagination to innovation. Academic tournaments take place around the world where teams have the opportunity to present their solutions to trained appraisers. Students have fun and gain confidence in their ability to solve any challenge. In working to solve our Challenges, teams learn 21st century skills (creativity, critical thinking, collaboration, communication, citizenship and courage) to build on their unique strengths.

LEARN MORE AT
DESTINATION **IMAGINATION**.ORG

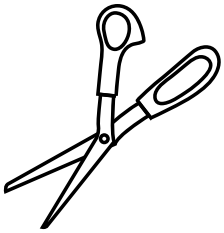
Like us Follow Us Share Pin With Us #IamDI

Balloons

Chenille
Stems

Instant Challenge Material:

Balloons (Warning: This activity uses latex balloons.)



- What is the farthest you can get the smallest balloon to stretch?
- How can you create a pendulum?
- How can you use a balloon to launch another balloon?
- How would you use the neck of the balloon to attach two things together?
- How many different ways can you attach the balloons together?
- What can you use the balloons for in a costume?
- Create a play that uses balloons to depict the story. Try to use the different shapes and/or colors of balloons to your advantage!
- Inflate a few balloons and put them in the corner of a room. Can you transport them across the room without them touching the ground or your bodies?
- It's not only fun to blow up balloons, but also to deflate them. Try to get a balloon to deflate slowly so it does not pop!

© Destination Imagination, Inc.

DESTINATION IMAGINATION

Instant Challenge Material:

Chenille Stems

- Can you create a container for materials such as marbles, pingpong balls or tennis balls?
- How many different ways can you attach the chenille stems together?
- Can you create a tall tower using only the chenille stems?
- How can you create a cube?
- How many ways can you create a device to retrieve a ball?
- How can you communicate a message using the different colors?
- Can you create a puppet show using only the chenille stems?
- How can you create costume pieces?
- Can you make three different insects out of the chenille stems?
- What other animal features (e.g., tails or horns) can you depict using the chenille stems? Create a Presentation that includes five features!

© Destination Imagination, Inc.

DESTINATION IMAGINATION

Straws

News
Print

Instant Challenge Material:

Straws

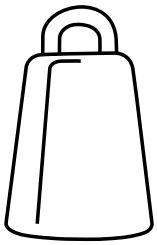
- Can you weave straws together into a sturdy structure?
- How many different ways can you attach straws together?
- Can you make an assortment of jewelry that includes necklaces and rings?
- How can you create a bridge?
- What is the tallest structure that you can make using only the straws?
- Can you create a vehicle out of straws? How about a device that can transport the vehicle?
- How can you create a device to transport straws from one pile to another?
- Can you create a Presentation that uses straws to provide sound effects?

© Destination Imagination, Inc.

DESTINATION IMAGINATION

Instant Challenge Material:

News Print



- What is the longest tube that you can make?
- What is the tallest structure that you can make?
- Can you create a dome that a team member can sit in?
- How can you create the longest continuous strip possible from the newsprint?
- How can you use the news print in a costume?
- Can you create three origami animals using large sheets of news print? Create a Presentation about your origami animals!
- Can you create a Presentation based on newspaper headlines?
- Can you create a Presentation that uses a picture in the newspaper taken out of context?
- Make a device to launch and catch crumpled news print balls.
- How can you make the tallest tower possible that holds as much weight as possible?

© Destination Imagination, Inc.

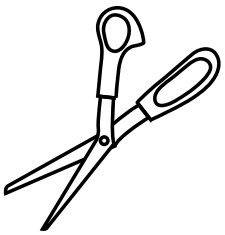
DESTINATION IMAGINATION

Cups

Foil

Instant Challenge Material:

Cups



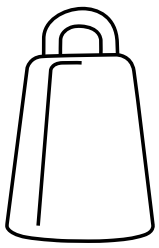
- How can you create a mask?
- How can you create a creature with moving body parts?
- What is the tallest tower that you can create?
- How can you create a Presentation only using imaginary cups?
- How can you create the longest continuous strip from a single cup?
- How can you use the cups to create a bridge?
- What can you do with the cups without destroying them?
- What kind of sound effects can you make with the cups?
- Imagine if the world were entirely made up of cups, and create a Presentation about it!
- Can you create a piece of art using only cups? How about a presentation that explains the art piece to a panel of art museum curators?

© Destination Imagination, Inc.

DESTINATION IMAGINATION

Instant Challenge Material:

Foil



- What is the smallest structure that you can make that floats on water?
- What is the largest structure that you can make that floats on water?
- Can you build a boat that can hold pennies, marbles or other "passengers?"
- How can you use the foil in a costume?
- Try playing a game of charades using only foil to convey ideas.
- How can you fold or rip the thinnest strip of foil?
- How can you create the tallest and thinnest structure possible?
- Can you create a musical instrument made of foil?
- Using only foil, how can you deliver water from one side of the table to the other?
- Can you think of way to use foil to convey a message, without talking, to someone across the room?

© Destination Imagination, Inc.

DESTINATION IMAGINATION

Popsicle
Sticks

Stickers

Instant Challenge Material:

Popsicle Sticks

- Using the popsicle sticks, what is the tallest structure that you can make with a base that fits entirely on this photograph?
- Basket makers weave strips of fiber together to make their baskets. Can you weave or cross-hatch the popsicle sticks together to make a sturdy structure?
- How many different ways can you attach the popsicle sticks together?
- What is the longest bridge that you can make using the popsicle sticks?
- Can you create a game based on the popsicle sticks (as game pieces, tokens, etc.)?
- How can you tell a story using the popsicle sticks to depict a scene?
- How can you create a device to launch the popsicle sticks?
- Can you create a puppet show that uses only popsicle-stick puppets?
- How can you create a Presentation with popsicle-stick shadow puppets?
- How can you communicate a message without talking, using only the popsicle sticks?

© Destination Imagination, Inc.

DESTINATION IMAGINATION

Instant Challenge Material:

Stickers

- What is the tallest structure that you can make?
- How can you create a linked chain from the stickers?
- How many different ways can you attach the stickers together?
- What can you do with the sticker backing?
- What is the largest sticky surface that you can make?
- What is the largest non-sticky surface that you can make?
- Can you build a bridge of stickers that spans a 1ft (30cm) gap?
- Can you think of a way to use the stickers to create a trap or case to hold small objects?
- Can you think of a way that stickers could convey a message? Create a Presentation that features stickers conveying a message to a character!

© Destination Imagination, Inc.

DESTINATION IMAGINATION