

Wild Feet Exploration

Home Connection

Dear Family,

During the last few days, the children designed a model shoe that might keep someone from slipping when walking on uneven surfaces. They acted just like engineers! They...

- identified and learned about a problem
- planned ways to solve the problem
- made a model
- tested the model
- thought about test results and made a new plan

In this exploration, children learned about engineering design, how different animals keep from slipping, and how engineers get ideas from nature to solve problems. They also practiced skills, such as planning and conducting an investigation, using quantitative data to make comparisons, and making a claim supported by evidence.

Say: *Tell me about what you did in this engineering project.*

Ask prompting questions if your child needs help.

- What did you find out about animal feet?
- What did you find out about human feet?
- What problem were you trying to solve?
- What did you do with the materials in the picture?

On the back of this sheet, work with your child to find out more about what the team did in this exploration.



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This STEM project has been developed in partnership with Texas A&M University.

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Say: *Show me how you placed the materials on the grid.*

Ask: *Why did you choose those materials? Why did you place them where you did on the grid? How did the plan you thought about differ from the final team plan? How did you test the model shoe?*

Try it!

1. Observe the soles of various shoes.
2. Develop a test to show which might be less slippery on a slope.
3. Talk about the results.

Ask: *Which shoes might be better for hiking in a hilly, rocky area?*

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Describe Materials

Name _____

Follow these steps.

1. Look at the four materials. Use a hand lens.
2. **Observe** Put an X under the words that describe each material.

Materials	Smooth	Has hairs	Bumpy	Bends	Stretches
Rug pad 					
Suction cup strip 					
Velcro® 					
Weather stripping 					

Can You Move It?

Name _____

Follow these steps.

1. Place each material on the smooth ramp surface.
2. **Observe** Is the material easy or hard to push?
Circle what you find in the chart.

	Smooth ramp surface		
Rug pad	Easy	Medium	Hard
Suction cup strip	Easy	Medium	Hard
Velcro[®]	Easy	Medium	Hard
Weather stripping	Easy	Medium	Hard

3. Repeat the tests using the rough ramp surface.
Circle what you find in the chart.

	Rough ramp surface		
Rug pad	Easy	Medium	Hard
Suction cup strip	Easy	Medium	Hard
Velcro	Easy	Medium	Hard
Weather stripping	Easy	Medium	Hard

Shoe Plan

Name _____

Follow these steps.

1. Circle one: My Shoe Plan Team Shoe Plan
2. **Imagine** Which materials will keep your model shoe from slipping?

3. **Plan** Write in the chart. Tell which materials you will use. Tell how many strips of each material.

Material	Number of Strips
Rug pad	
Suction cup strip	
Velcro®	
Weather stripping	

4. **Plan** Use crayons to draw your plan. Label the materials.

Test Results

Name _____

Follow these steps.

1. **Test** your model shoe on the rough side of the ramp.
Write what happens.

Rough Side

Position of ramp	Did your model shoe slide off?	
Gentle slope	Yes	No
Steep slope	Yes	No

2. **Test** your model shoe on the smooth side of the ramp.
Write what happens.

Smooth Side

Position of ramp	Did your model shoe slide off?	
Gentle slope	Yes	No
Steep slope	Yes	No

3. **Think** Why do you think your model shoe did or did not slip during the tests?
