

STEMify Low Ropes

The Spider Web

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NGS Standards:

Connections to Math
ESS2 Earth's Systems
PS1 Matter and Its Interactions

Time:

Plan/design: 5-10 minutes
Activity/testing: 15-25 minutes
Group Processing: 5-7 minutes

Materials:

Spiderweb element (portable or stationary); clothes pins

STEM Themes:

Interdependency
Estimation
Mass and Weight
Circumference

Team Building Themes:

Planning
Trust
Participation

Permission:

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Activity Objective

The group will work together to cross through the various portals in the spider's web without touching the string. The main objective is to get each member through to the other side. Once a portal in the web has been utilized, the facilitator will attach a clothes pin making it off limits for further use.

Opening Inquiry

Lead the group in a discussion that will begin the planning/design stage of this challenge by asking a few guiding questions:

- ♦ What aspects of the spider's web do you need to consider before you begin?
- ♦ How will you get each member through the web to the other side without touching the web?
- ♦ Are there any physical or emotional safety concerns you should factor in to your plan?

Set Up

Give the group 3-5 minutes to plan and design how they will successfully get each member of their group through the web. *Facilitator: listen covertly for themes you can draw out at the conclusion of the activity.*



—continued—



Safety in Focus

The primary safety component of this activity is **proper spotting technique**. Facilitators should ensure that each elevated person's head, neck, and back are strongly supported through the duration of the activity. This is particularly important on the first few elevated attempts and whenever the group seems to be distracted from their task.

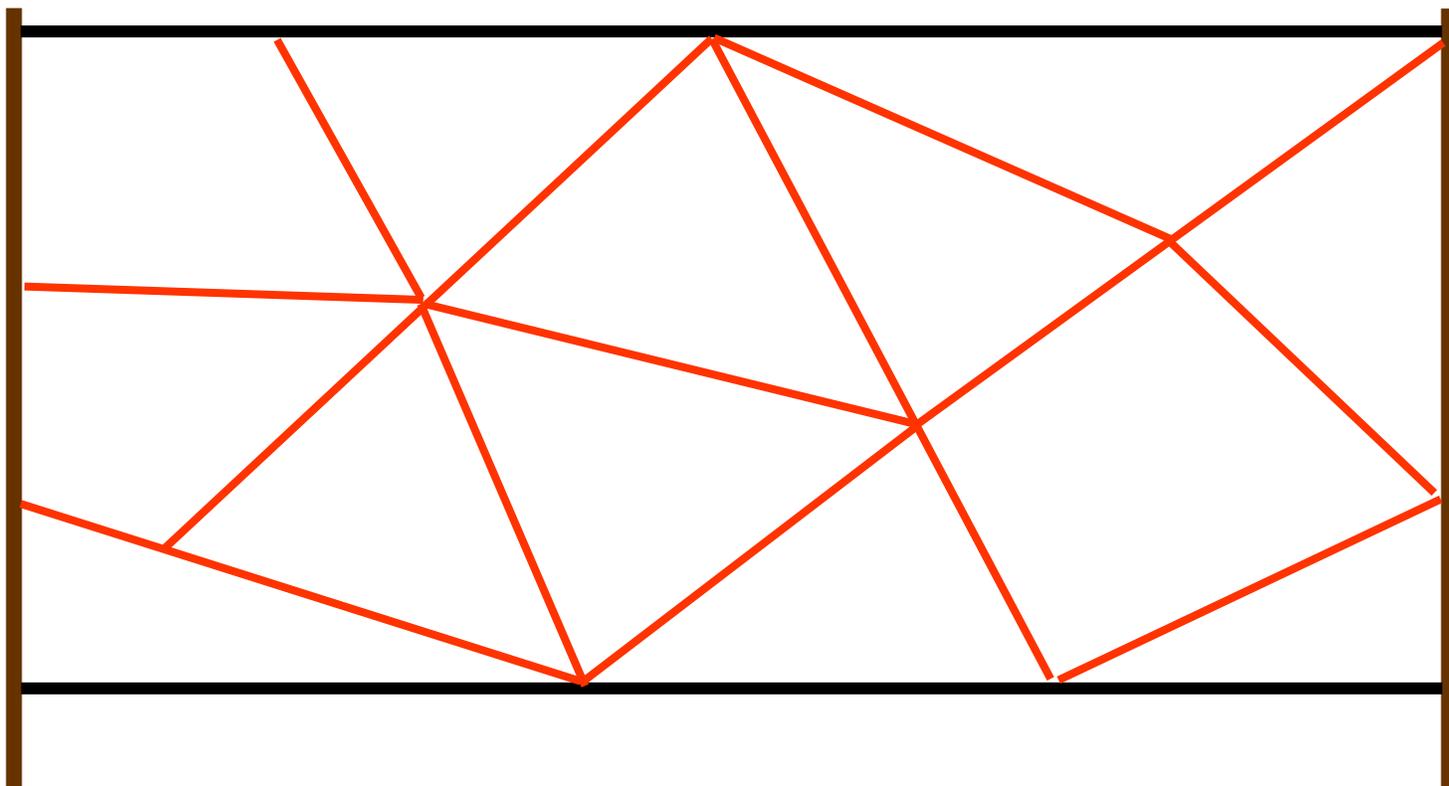
Other rules to share with the group related to safety:

- ◆ Everyone must go through with at least one foot first.
- ◆ No running and diving through a portal.
- ◆ If you bump the rope, the instructor will ask you to safely bring the person back to the ground. Manage this carefully.
- ◆ It is better to fail than to drop a person.

Procedure Perfect

The perfect group will understand from the very beginning that their heaviest/strongest person should step through one of the easy bottom portals. Then the group should “test” their elevated passing skills on a medium-sized person in a mid-level portal. Once successful, they should pass the medium and light persons through the correspondingly sized mid and upper level portals. All the while, the light people serve as watchers and spotters to ensure safety and accuracy. Finally, the two remaining heavy lifters will step through the remaining bottom two portals.

The diagram below is a representation of a typical Spider Web. Portal sizes and numbers will vary. The only requirement is that there is enough portals for each member of the group, and that they are not so small as to be too difficult for the intended group.



—continued—



Facilitator Tips

Consider the following as the activity unfolds:

- ◆ Are there any safety concerns you need to immediately address?
- ◆ How many of the participants are fully trusting while elevated (bodies flat; calm; fairly quiet)?
- ◆ What STEM words do you hear utilized by the group in their planning and testing?
- ◆ Does the level of challenge seem about right? Should an *Increasing the Challenge* be added?

Increasing the Challenge

1. Rather than just allowing a “do over” when the string is bumped, take away a particular portal for a certain period of time. Then open it back up at a less convenient time for the group.
2. For advanced groups, blindfolding the person passing through can add a layer of challenge.
3. Make a time limit for the activity. If this is chosen, ensure safety remains paramount.

Variation

When mobility is a concern, you can provide a long rope to the group and have them try to weave it through all of the portals without ever touching the web. For this variation, the group can be on both sides of the web from the beginning.

Processing the Activity

Spend 2-3 minutes discussing the following questions before moving on to the next activity:

- ◆ In what ways did your team work well together? What might you have done differently?
- ◆ What science and math skills did you use to complete this activity?

As appropriate, review the unmentioned/remaining *Themes* from page 1 to ensure group learning.

Citation

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Materials: Do I have enough portals and clothes pins for the size of today's group?

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Team Building Themes: Planning; Trust; Participation

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