

STEMify Low Ropes

The V Team

Tim Tanner ♦ 4-H Educator—Harrison County

NGS Standards:

Connections to Math
PS1 Matter and Its Interactions
PS2 Motion and Stability
ETS1 Engineering Design

Time:

Plan/design: 3-5 minutes
Activity/testing: 15-20 minutes
Group Processing: 5-7 minutes

Materials:

The V Team element

STEM Themes:

Angles
Mass and Weight
Counterweight, Pivot, and Load

Team Building Themes:

Trust
Vulnerability
Cooperation

Permission:

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Activity Objective

The group will pair off into like-sized individuals. Each pair will have a turn trying to partner shuffle across the opposing wires until they either touch the tree at the far side or fall. The objective is to trust your partner and the spotters below while going as far as you can on the V.

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 role to the people on the ground/spotters play in this activity?
- ♦ What math and science principles might be useful to consider before you begin? How will you use those principles?
- ♦ Are there any physical or emotional safety concerns you should consider prior to beginning?

Set Up

Give the group 2-3 minutes to partner off and plan how they will get across successfully. *Facilitator: listen covertly for themes you can draw out at the conclusion of the activity.*



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STEMify Low Ropes: A Curriculum
Advancing STEM in Camp Settings

Safety in Focus

The primary safety component of this activity is **prevention of falling**. Facilitators should ensure that the participants are always properly spotted underneath and behind.

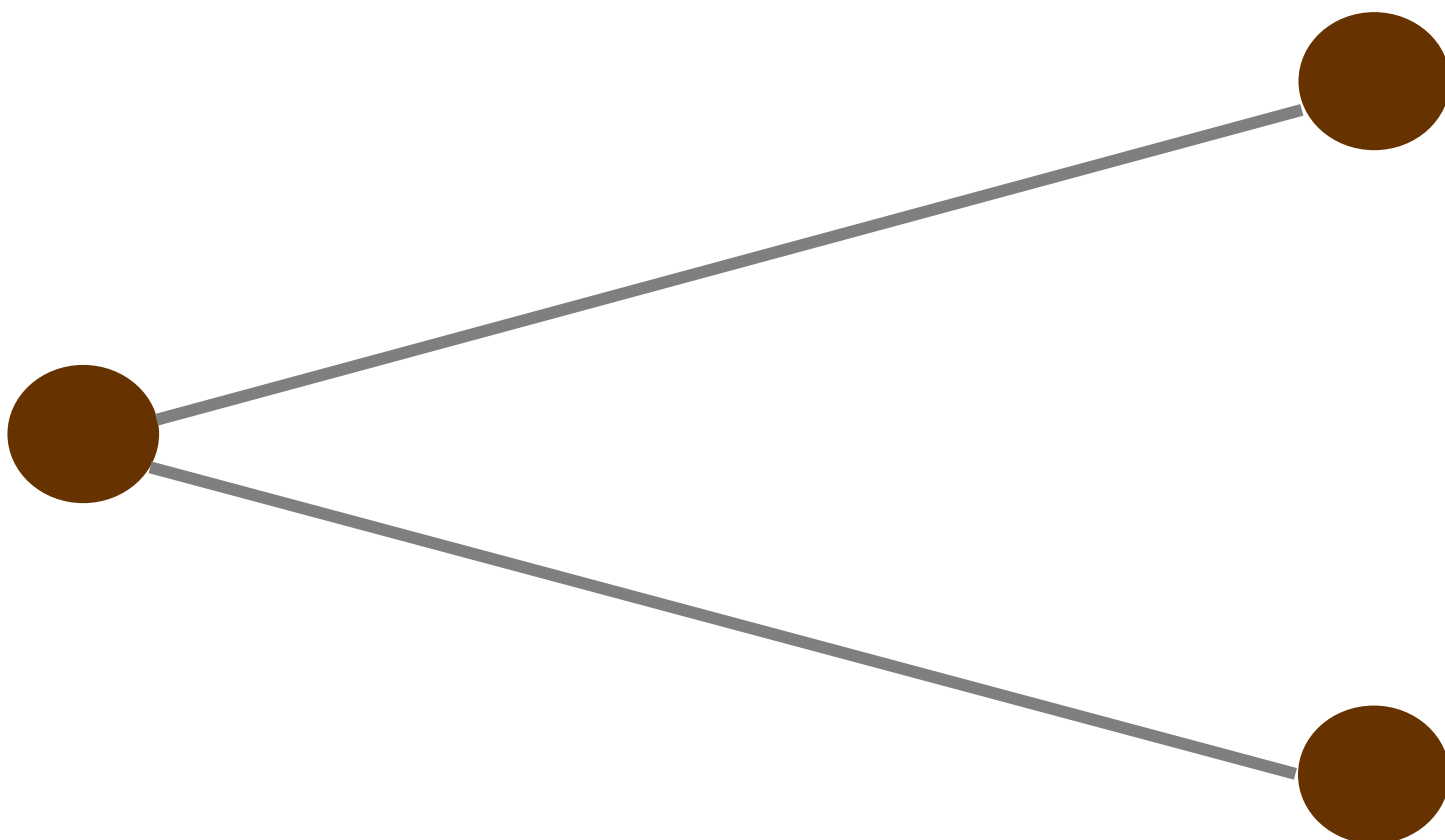
Other rules to share with the group related to safety:

- ♦ The underneath spotters should walk with their hands on their knees and their heads facing the ground. They must resist the urge to look up ever. Make sure you take turns with different people in this role so they don't physically tire.
- ♦ The participants may not jump or walk on the wire, they are to slide on the soles of their shoes.
- ♦ Stay off the wires before and after the event. (This aids the element's physical longevity.)

Procedure Perfect

The perfect partners will full trust one another and keep their arms locked straight and bodies straight throughout (sagging buttocks are the most common “failure” amongst participants—denotes a lack of trust). Most importantly, they will keep their eyes locked on each other and proceed apace with quiet commands like “slide, break, slide, break, slide, break.” The spotters will call out encouraging words and let them know how far until they reach the end.

The diagram below is a representation of a typical V Team set-up. If you are building one, make sure the securing bolts do not stick out of the tree in such a way as to cause leg snags and cuts.



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Facilitator Tips

Consider the following as the activity unfolds:

- ♦ Are there any safety concerns you need to immediately address?
- ♦ Is everyone maintaining involvement, at least through words of encouragement or support?
- ♦ 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. For groups you have noticed are very athletic and homogenous, consider giving them the option of being blindfolded. This may also be considered as a Round 2 option.
2. Another Round 2 option, "Noting what we have already learned about weight and counterweight, we will now do Round 2 by pairing up individuals that are completely different in body length/size."
3. You can have strong partnerships go all the way out and all the way back.

Variation

No variations. This element should be skipped if you have mobility or injury challenges within the participant group.

Processing the Activity

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

- ♦ In what ways did you and your partner work well together? What might you have done differently if you had another shot at it?
- ♦ How did the rest of the group behave while you had your turn on the wire?
- ♦ What did the final pairings learn from those that went earlier?
- ♦ 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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V Team

Materials: Do you have blindfolds handy in case you decide to increase the challenge?

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- ◆ Stay off the wires before and after the event. (This aids the element's physical longevity.)

STEM Themes: Angles; Mass and Weight; Counterweight, Pivot, and Load

Team Building Themes: Trust; Vulnerability; Cooperation

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