

**Professional Development Situation: Training**

**Skill Focus: Managing Groups during STEM**

**Time Required: 75 minutes**

## ORGANIZATION THAT SUPPORTS GROUP MANAGEMENT

Participants will engage with water droplet races to learn to manage groups during STEM.

### Agenda

Welcome—5 minutes

Introduction—5 minutes

What if?— 20 minutes

- [What If? Group Management Cards](#)

See the Skill in Action—10 minutes

- [Keeping the Group Focused](#) video-based learning module

Hands-On Learning—20 minutes

- [Water Drop Race Activity](#)

Conclusion—15 minutes

### Materials

- Computer with Internet connection
- Projector and speakers
- Flip chart paper and markers
- Pens for participants
- [What If? Group Management Cards](#) cut out
- [Keeping the Group Focused](#) video-based learning module
- [Water Drop Race Activity Materials](#)

## Before the Session

- **Read this training guide** to become familiar with the content and allow time to personalize the activities to best suit your presentation style. Watch all videos and read informational materials.
  - *Italics indicate text that can be read aloud or emailed to participants.*
- Send reminder email about the training. Determine if any participants require accommodations (sight; hearing; etc.).
  - *The next professional development opportunity to enhance our STEM skills will be on DATE at TIME at LOCATION. Our focus for this session will be “Managing Groups during STEM”. Let me know if you require any accommodations to participate in the training. I am happy to answer any questions you have and look forward to seeing you at the workshop. I can be reached at CONTACT INFO.*
- Gather all materials needed for the training.
- Develop a list of possible questions participants might have during the training. Create potential responses to be explored through informal conversation. Review any key terms or ideas that may be unclear.
- On the day of the training, test the audio and video equipment.

## Training Outline

### Welcome (5 min)

- Greet participants as they arrive. Make sure everyone feels welcome and comfortable.
- Introduce yourself and the focus of the session: “Managing Groups during STEM”.
- Ensure participants are aware of the locations of restrooms facilities, refreshments, etc.

### Introduction (5 min)

- Have participants make a name tent or nametag if they don’t know each other already.
- On their name tents, have them write one strategy that they use to manage group activities.
  - *Group management is a lot like oxygen; you don’t notice it unless there’s not enough of it. What kinds of things do you do to make activities go more smoothly?*
- Ask participants to thank their partners for sharing.

### What If? (20 min)

- Pass out one [What If? Group Management Cards](#) per person.
  - *We are now going to play a game related to group management of STEM activities in out-of-school settings. You're going to walk around the room and partner with someone. Introduce yourself. Then you will share your "What if" scenario and talk about what you might do if something like that happens in your setting. When you're finished, trade cards and find a new partner.*
- Allow an opportunity for participants to ask questions about the activity. You can model the interaction for them if they are unclear.
- As people mingle, call out "Switch!" so that the groups break up and find new partners.
- Debrief that activity.
  - *That activity can be called "Share-Trade" and you can use it in your setting with any kind of open-ended questions.*
  - *How is this a group management strategy? (It makes youth talk quickly and think on their feet, it gets them moving in a structured way.)*

### See the Skill in Action (10 min)

- Cue up the [Keeping the Group Focused](#) video-based learning module.
  - *Watch this staff person facilitate a STEM activity with youth. Watch for the strategies they use to support youth to stay focused.*
  - *In particular, COUNT the number of positive comments that they use.*
- Share all the steps of the video-based learning module.
  - *What strategies do the staff use to manage youth engagement?*
  - *They ask 6<sup>th</sup> grade youth to form a line. Do you agree that this is a good strategy for managing behavior? (Responses will vary; **management is about supporting learning, control is about making sure youth are doing what you want with their bodies.**)*
- Re-watch the video if necessary.

**Management is about supporting learning. Control is about regulating youth's bodies. We should try to manage, not control.**

### Hands-on Learning (20 min)

- For this portion of the activity the participants will be doing the [Water Drop Race Activity](#).
- Introduce the idea of inertia, which is: that an object at rest is inclined to stay at rest.
- Pass out the materials and engage the participants in the three challenges of the [Water Drop Race](#).
- Include one specific challenge.

- *For every recommendation, criticism, or negative thing you say, you have to say 5 positive things.*
- After the activity, reflect on it with an eye toward how you might use this in your program.
  - *Now imagine you are going to use this activity with youth in our program.*
  - *How would you tie it to STEM concepts?*
  - *What are things youth should do alone? In pairs? As a group?*
  - *What is your role, as the adult, as experiments like these are happening in the setting?*
  - *What is the significance of saying 5 positive things to 1 negative thing?*
- Add that many [studies of business groups](#) and even [marriages recommend a ratio of 5 positive comments to every 1 negative](#) comment.

### Conclusion (15 min)

- Reflect on the training as a whole, including the “What if” cards, the videos, your time doing the water drop race, and your planning to use with youth.
  - *Are there things you think you could do differently in your facilitation of learning?*
- Encourage participants to make a commitment to try something they learned from the training.
  - *Write a short “I will” statement on a piece of paper and share it with your partner.*
- Thank participants for their positive engagement and encourage them to get in touch with you if they have concerns or questions.

### After the Session

- Within a week of the training, email all participants.
  - *Thank you for your participation in the recent Click2Science training on “Managing Groups during STEM”. I hope you found it useful. Consider meeting with a co-worker, supervisor, or friend to share what you learned. I look forward to continuing our learning at the next session on SKILL/FOCUS on DATE at TIME at LOCATION. Please let me know if you have any questions. I can be reached at CONTACT INFO.*

Want to Earn Credit? Click2Science has teamed up with Better Kid Care to provide continuing education units. Check it out at: <http://www.click2sciencepd.org/web-lessons/about>

## Water Drop Race Activity

### Materials

- Waxed paper (minimum of 12" is suggested; longer for more difficult race)
- Water
- Small cups (to store water and mix food coloring)
- Food coloring (red and blue; yellow and green—any two-color combination that will produce a new color)
- Straws (minimum of 3"—the longer the straw, the more difficulty)
- Eye dropper (1 per group)
- Paper towels

### Activity

Pass materials out to pairs of participants. Participants will race by blowing on their water drop to push it across waxed paper to the other side. The first person to the other side of the waxed paper "wins."

Scenario 1—1 vs. 1 water race to see who can get their drop to the other side of the paper the fastest.

Scenario 2—1 vs. 1 color drop race to see who can make the color purple the fastest. Each person starts with two drops of water: one drop of red water on one side and one drop of blue water on the other—the person whose drop becomes purple first wins. Players have to move back and forth from one side of the table to the other to get the water drops to meet in the middle.

Scenario 3—2 vs. 2 color drop relay race—same set up for the 1 vs. 1 color drop race, only this time one partner is on one end of the table and the other is on the opposite end.

All of the races have their advantages and disadvantages. Some things you'll want to do alone because it is more efficient and less frustrating (e.g., 1 vs. 1 race). Other things you'll be able to do faster and more efficiently with a partner.

### Reflection Questions

- What are things youth should do alone? In pairs? As a group?
- How can you, as the adult, create opportunities for these types of groupings?
- What is your role, as the adult, as experiments like these are happening in the setting?

## What If? Group Management Cards

Your space is too small.	The schedule is too busy.
It's too noisy in the learning space.	Youth aren't talking to each other at all; it's too quiet in the STEM learning space.
Youth have a different idea than adults about how something works in STEM.	Youth have difficulty waiting their turn.
There are not enough materials.	The space is too big (leading to running near materials).
Youth are making mistakes and getting frustrated with the activity.	Youth disagree about what to do next.
Another adult misunderstands youth behavior and corrects them harshly.	Materials aren't functional for the activity.
Youth are over-stimulated (too much noise/ color/ activity).	Youth has a difficult day at school or at home.