

Lesson 15: Team Problem Solving

45 minutes

Overview

This lesson explicitly addresses the challenges students may find working in a group and supports them in crafting a plan to overcome these challenges. Students work together to set group norms and brainstorm what features they would like their websites to have. The class starts by thinking of some popular teams in different contexts, then reflects on what makes teams successful. They then get into their own teams and make a plan for how they will interact and reach success in their own projects. Afterward, the teams begin to brainstorm ideas for their website project.

Question of the Day: How can we work together to make a great team?

Standards

Full Course Alignment

CSTA K-12 Computer Science Standards (2017)

- ▶ **AP** - Algorithms & Programming
- ▶ **IC** - Impacts of Computing

Agenda

Warm Up (5 minutes)

Activity (35 minutes)

Team Goal

Skills and Goals

Bringing Different Ideas Together

Looking forward

Wrap Up (5 minutes)

Shout-outs!

Objectives

Students will be able to:

- Communicate and collaborate with classmates in order to solve a problem

Preparation

- Check the "**Teacher's Lounge**" forum for verified teachers to find additional strategies or resources shared by fellow teachers
- If you are teaching virtually, consider checking our **Virtual Lesson Modifications**

Links

Heads Up! Please make a copy of any documents you plan to share with students.

For the teachers

- **Team Problem Solving** - Slides

▼ Make a Copy

For the students

- **Video: Managing Disagreement** - Video (**Download**)
- **Video: Teamwork** - Video (**Download**)
- **Website Team Plan** - Activity Guide

▼ Make a Copy

Teaching Guide

Warm Up (5 minutes)

Game: Top Five Teams

You may also choose to have this game displayed as the class walks in, and allow them to write down their answers at their own pace.

Remarks

Today is the first day that you get to work in your teams. Before we do that, we're going to think of some of the top teams in the world. When I say a category of team, everyone should write down the team you think **most of the class** will answer as the top team. If you choose the most popular team, you get a point. Remember, it's not the one you think is the top, but the one you think most people will answer.

1. Top Music Team (band or singing group)
2. Top Sports Team
3. Top Superhero Team
4. Top Villain Team
5. Top Kid-only Team

Have students share out their answers after each one, and note the most popular answer, giving "points" to those who guessed correctly.

Prompt: We've mentioned some very successful teams. Write down three things that you think made these teams so successful.

Share: Allow students some time to write down their own answers, then have them share with the rest of the class. Highlight characteristics that will be helpful when they are working with their teams on the project.

Discussion Goal: This game and discussion should prime students to think about strategies for successful teamwork on the project. Feel free to swap out the categories for ones that make more sense for your own classroom.

Question of the Day: How can we work together to make a great team?

Activity (35 minutes)

Group: Place students in their project groups.

Display: Show students the **Video: Teamwork** video in the slides.

To encourage active engagement and reflection, use one or more of the strategies discussed in the **Guide to Curriculum Videos**.

Questions to Consider with Video:

- What are the advantages to working in a team?
- What are some tips for teams to work well together?

Discussion Goal: The goal of this video is to help students come into teamwork with a positive attitude and give them a few suggestions for how to make their teams run more smoothly. Students may have different ideas for the advantages of working on a team, but they should note that people can get more done in a team and that bringing in a diversity of ideas will make a project better.

Teamwork Tips: The video includes several tips on how to work as a team. Consider recording these rules on a poster or a small handout that students can refer back to regularly. The tips mentioned in the video are:

- Have a plan
- Give everyone a special role
- Celebrate successes of your teammates
- Have fun!
- Figure out everyone's strengths
- Listen to and respect everyone's ideas
- Be confident in sharing your ideas

Team Goal

Distribute: Hand out the activity guide.

The teams should start by discussing possible topics for their project and eventually, they should make a decision and all be in agreement about the topic.

Skills and Goals

Each student should identify their own personal strengths and areas of growth for the project, then share those out with the group.

This type of personal reflection and sharing may be difficult for some students. Depending on the class, you may want to take some time to review how to listen respectfully to others in the group. This first activity is a good chance for students to practice this type of listening. Some groups may need teacher intervention to explain what sorts of specific behaviors promote good group dynamics.

Students use what they've learned to come up with a plan for their group and how they will support each other.

Bringing Different Ideas Together

Remarks

Part of working in groups is having lots of different ideas, and team members don't always agree on how to bring their ideas together. We're going to explore some different ways that a team can manage disagreement to make their product even better.

 **Video:** Show students the [**Video: Managing Disagreement**](#) video in the slides.

Question to Consider with Video:

- What are three tips for dealing with disagreement?

Discussion Goal: Students should understand that disagreement is a normal part of teamwork and have strategies for constructively dealing with disagreement in their teams.

Students plan how they will deal with disagreement and come up with strategies for advocating for themselves and their team members.

Collaboration and Inclusivity: Fostering an inclusive culture and collaborating around computing are core practices in the CS K12 Framework. Students may need guidance on effective strategies for inclusion and collaboration. For example, some students may suggest a "majority rules" approach to disagreement. Challenge students to think of how that may exclude valuable perspectives and whether there are better strategies that can incorporate the entire team's voice.

Tips for Handling Disagreement: The video includes several tips for handling disagreement. Similar to the last video, consider having a poster or small handout that students can refer to with these tips. Examples include:

- Appreciate that your team has lots of ideas, even if you don't agree with all of them.
- Be curious about the other ideas, and try to understand what is good about them.
- Compromise with your teammates, taking good parts of lots of ideas and putting them together.

Looking forward

Students define what success will look like in the context of the project and anticipate what will be the most challenging and most fun parts of the project.

Circulate: As students are completing or have completed the guide, circulate around the room and ask them about their plans for working together in a group. You may want to point out the advantages and disadvantages of certain strategies.

Share: Have different groups share out aspects of their plans. You may want to call out specific effective strategies that you saw during the activity.

Formative Assessment: You can use the short answer responses on the second page of the activity guide to assess student mastery of the learning goals of this lesson, in particular their ability to work as a team.

Brainstorming

Discuss: Give students time to brainstorm ideas for their project in their teams. They can talk about different content or website features that they would like. As they discuss, keep an eye out for potential problems in group dynamics and intervene if necessary. Remind team members of their plans and how they can contribute to a successful team.

Wrap Up (5 minutes)

Shout-outs!

Question of the Day: How can we work together to make a great team?

Prompt: When you work in a team, it's important to recognize when your team members do something great. For each member of your team, write down one "shout-out" that recognizes a special way they contributed to the group today.



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