

# Crowdsourcing

Lesson time: 20 Minutes

Basic lesson time includes activity only. Introductory and Wrap-Up suggestions can be used to delve deeper when time allows.

## LESSON OVERVIEW

In computer science, we face some big, daunting problems. Challenges like finding large prime numbers or sequencing DNA are almost impossible to do alone. Adding the power of others makes these tasks manageable. This lesson will show your students how helpful teamwork can really be.

### TEACHING SUMMARY

#### Getting Started - 20 minutes

- 1) [Review](#) 2) [Vocabulary](#)
- 3) [Big Problems](#)

#### Activity: Crowdsourcing - 20 minutes

- 4) [Working Together](#)

#### Wrap-up - 5 minutes

- 5) [Flash Chat](#) - What did we learn? 6) [Vocab Shmocab](#)

## LESSON OBJECTIVES

### Students will:

- Identify a large task that needs to be done
- Rearrange a large task into several smaller tasks
- Build a complete solution from several smaller solutions

# TEACHING GUIDE

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## MATERIALS, RESOURCES AND PREP

### For the Student

- Playing Cards (1 Deck per group)

### For the Teacher

- [Lesson Video](#)

#### MATERIALS TIP

*Playing cards usually come in multi-packs at the dollar store, but if you're rushed you can [print some from online](#) onto cardstock and cut them out with a slicer.*

### For the Teacher

- This Teacher Lesson Guide
- [Crowdsourcing Activity](#): Working Together
- Jar of lots of something (Pennies, Buttons, Slips of Paper)

## GETTING STARTED (20 MIN)

### 1) Review

This is a great time to review the last lesson that you went through with your class. We suggest you alternate between asking questions of the whole class and having students talk about their answers in small groups.

Here are some questions that you can ask in review:

- What did we do last time?
- What do you wish we had had a chance to do?
- Did you think of any questions after the lesson that you want to ask?
- What was your favorite part of the last lesson?

#### LESSON TIP

*Finishing the review by asking about the students' favorite things helps to leave a positive impression of the previous exercise, increasing excitement for the activity that you are about to introduce.*

### 2) Vocabulary

This lesson has one new and important word:

#### New Word!

# Crowdsourcing

Say it with me: Crowd-sore-sing

*Getting help from a large group  
of people to finish something faster*

**Crowdsourcing** - Say it with me: Crowd-sore-sing

Getting help from a large group of people to finish something faster

### 3) Big Problems

- Show your students your jar full of something.
  - "Look at this jar. I have a lot of buttons in here, and I need to tell the principal how many there are before the end of class."
  - "Can you think of a way I could get these counted quickly?"
- Your students may guide you toward seeking help, but if they don't, you can suggest it, too.
  - Pour all of the buttons (or pennies, etc.) into a pile on the floor.
  - Invite all of the students to come up and grab a small number (ten is good, but you can do more if your students can handle it).
  - Once they've counted out their ten, have them report to you, drop their buttons back in the jar, and go again until the pile is gone.
- Comment on how fast the task went.
  - Have the class reflect on how long it might have taken or how hard it may have felt to do alone.

#### LESSON TIP

*Jars of buttons and pennies work nicely, but if you find yourself with little time to prepare, you can cut slips of paper and put them in a ziplock bag or even a pencil box.*

## ACTIVITIES: (20 MIN)

### 4) [Crowdsourcing Activity](#): Working Together

- Sometimes you have a big job that needs to get done, but it feels like it will take forever. Crowdsourcing is a way of using teamwork to make the job go much faster!
- In this game, we'll use crowdsourcing to sort decks of playing cards.

#### Directions:

- 1) Divide into groups of 4, 5, or 6.
- 2) Grab your deck of playing cards and dump it into a bag, bucket, or even a loose pocket that you can make with the bottom of your shirt.
- 3) Shake the cards until they're all mixed up.
- 4) Dump the cards out onto a table or desk where the whole group can see them.
- 5) Decide how to break up the task of sorting the deck so that every person has something to do and no one is doing too much.
- 6) Time yourself sorting the cards. Can you figure out a way to do it faster?
- 7) Repeat the game over and over until you think you have found the fastest way of crowdsourcing the card sorting activity.

#### LESSON TIP

*It can be challenging for students to figure out how to break apart large tasks at first. Students might find it helpful to have some ideas handed to them after working for a while. One great division for sorting cards is as follows:*

- One person picks up the cards and determines the suit of each one.
- One person manages Hearts.
- One person manages Diamonds.
- One person manages Clubs.
- One person manages Spades.
- (If there's another, they can put all sorted suits back together again.)

## WRAP-UP (5 MIN)

### 5) Flash Chat: What did we learn?

- Have you ever tried to sort a pile of cards by yourself before?
- Do you think it was easier or harder to have help?
- What other things do you have to do sometimes that would be easier with help?

#### LESSON TIP

*Flash Chat questions are intended to spark big-picture thinking about how the lesson relates to the greater world and the students' greater future. Use your knowledge of your classroom to decide if you want to discuss these as a class, in groups, or with an elbow partner.*

### 6) Vocab Shmocab

- Which one of these definitions did we learn a word for today?

"Pulling something out"

"Getting help from a large group of people to finish something faster"

"Something that is not cooked"

...and what is the word that we learned?

## ASSESSMENT (0 MIN)

### 7) No Individual Assessment

- Since crowdsourcing is not meant to be done alone, there is no individual assessment.
- The final assessment of this lesson is the result of the previous activity.

## EXTENDED LEARNING

Use these activities to enhance student learning. They can be used as outside of class activities or other enrichment.

### Reverse Crowdsourcing

- Often we think of crowdsourcing as pulling things apart to make them more simple. You can also make big, beautiful things with the same technique.
- Have your students each grab three cards and build one segment of a [card house](#).
- Each student can go one after another to build a grand card tower.
- Try with two, or even three students adding their chunk at a time.
  - Does crowdsourcing always make a task easier?

### Crowdsourcing in the Round

- You can crowdsource all at the same time or you can do it one person at a time. Try having the whole class sort the same deck of cards, one student at a time.
  - Shuffle the cards and place them in a pile in the center of the room.
  - Have each student approach the pile and choose four cards.
    - Have four piles for the students to sort their cards into
      - Spades
      - Clubs
      - Hearts
      - Diamonds
    - Once all cards have been put in their four piles, have the following four students sort the individual piles.
    - The last person will put all four piles together.
- This version may not save a lot of time, but it still divides the work and lets each individual have more free time!

Using Materials From



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