



# At Risk for COVID-19?

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## Teacher Guide

### Lesson Summary:

This lesson is designed to promote student conversations about the importance of COVID-19 vaccines for protecting the people around them. It is recommended that students work in pairs and that ample time be devoted to discussion and sharing answers with the class.

Consider creating a “Question Board” where students can write questions that they have about the COVID-19 vaccine. Take time to answer these questions at the end of the lesson. The teacher can answer the questions or assign the questions to students for their research.

This lesson can be modified based on time available. Parts 5 and 6 are optional. You could add a Part 7 in which students write and share brief stories about what might happen if each of the eight people got COVID-19.

**Estimated Time Needed:** 60-80 minutes

### Key Concepts:

Lesson Part	Key Concept
Part 1: Why was Sam not vaccinated?	There are many reasons people give for not getting vaccinated.
Part 2: Does Sam have COVID-19?	Rapid tests can be used to see if people have COVID-19.
Part 3: Who is likely to be hospitalized?	Some people are more likely to be hospitalized than others.
Part 4: Who is at risk if they get COVID-19?	Hidden health conditions increase some people’s risks for serious illness.
Part 5: COVID-19 testing	People with COVID symptoms should get tested.
Part 6: Protecting yourself and others	Vaccines protect you and those around you.

## Supplies needed:

Each pair of students needs -

- 2 cotton applicator swabs - with one tip  
[https://www.amazon.com/Tifanso-Inches-Cotton-Applicators-Cleaning/dp/B0863CBNY2/ref=psdc\\_3784941\\_t3\\_B07MMMZWGL](https://www.amazon.com/Tifanso-Inches-Cotton-Applicators-Cleaning/dp/B0863CBNY2/ref=psdc_3784941_t3_B07MMMZWGL)
- 2 small test tubes
- 2 plastic zip-top bags (large enough to fit a cotton applicator swab)
- 2 small plastic droppers
- Small bag containing 24 “Starflake” beads - 8 red beads, 8 purple beads, 8 blue beads  
<https://www.craftsupplydepot.com/beads/18mm-starflake-beads01.asp>

Also needed -

- 1 tablespoon of WASHING soda (not baking soda)  
<https://www.amazon.com/Arm-Hammer-Super-Washing-Soda/dp/B0029XNTEU>
- 1% phenolphthalein solution  
<https://www.amazon.com/1-Phenolphthalein-Solution-30mL-Collection/dp/B077T2PXR8>

## Lesson Preparation:

- For Part 1 - 1 copy of **At Risk for COVID-19?** student handout for each student. *Note: This may be distributed as a single packet with all the lesson parts OR distribute one lesson part at a time as you begin each part.*
- For Part 2 - Each pair of students gets:
  - 1 cotton applicator swab in a plastic bag labeled **Sam Robinson**
  - 1 small tube containing enough washing soda solution to cover the end of the cotton applicator swab. Prepare washing soda solution by mixing 1 tablespoon of washing soda with 1 cup of tap water.
  - 1 **QUICKTest Strip** that has a spot of 1% phenolphthalein on both the C and the T. Print the page of QUICKTest Strips on white cardstock paper. Use a cotton swab to apply spots of phenolphthalein on top of the **C** and **T**. Then, cut out the individual QUICKTest Strips.
  - Color copy of **Instructions for COVID-19 QUIKTest**. Laminate or put in a sheet protector for reuse.
- For Part 3 - Each pair of students gets:
  - Color copy of **People Who Had Contact with Sam**
  - Bag containing 24 starflake beads - 8 red beads, 8 purple beads, 8 blue beads

- For Part 4 - Each pair of students gets:
  - Set of 8 **Health Information Cards**
  
- For Part 5 - To reduce teacher preparation, each pair of students will test only one of the eight people. You will need to facilitate sharing of test results so that students can complete the **Results of COVID Testing** chart on page 6. Each pair of students gets:
  - Color copy of **Instructions for COVID-19 QUIKTest**.
  - 1 plastic bag labeled with one of these names: **Angel Perez, Nevada Cody, Nilsa Crowder, Bonny Blankston, Dean Trembly, Mason Blankston, Tia Sierra, or Greg Nhan**. Put the following items into the labeled plastic bag:
    - 1 small tube containing enough washing soda solution to cover the end of the cotton swab. See the “For Part 2” instructions above for how to prepare the washing soda solution.
    - 1 cotton applicator swab – with 1 tip
    - 1 **QUIKTest Strip** prepared as described in the chart below

<b>This QUIKTest strip goes in bag labeled:</b>	Spot the <b>C</b> with 1% phenolphthalein	Spot the <b>T</b> with 1% phenolphthalein
<b>Angel Perez</b>	no	<b>YES</b>
<b>Nevada Cody</b>	Do <b>NOT</b> spot the QUIKTest strip	
<b>Nilsa Crowder</b>	<b>YES</b>	no
<b>Bonny Blankston</b>	<b>YES</b>	no
<b>Mason Blankston</b>	<b>YES</b>	<b>YES</b>
<b>Dean Trembly</b>	<b>YES</b>	no
<b>Tia Sierra</b>	<b>YES</b>	<b>YES</b>
<b>Greg Nhan</b>	<b>YES</b>	<b>YES</b>

- For Part 5, teachers should be prepared to assist with answering question 11 - Where could people go to get free COVID-19 testing in your community?
  
- For Part 6 - Each pair of students gets:
  - Color copy of **Four Signs**
  - Optional - poster paper and colored markers

**Suggested information related to COVID-19 vaccines:**

- **CDC: Vaccines for COVID-19**  
<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html>
- **FDA: COVID-19 Vaccines**  
<https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines>

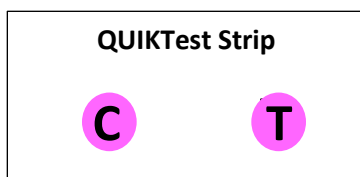
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## Instructions for COVID-19 QUIKTest

1. Place the cotton swab into the liquid inside the tube. Stir the swab in the liquid 4 times to transfer any viruses that are present on the swab to the liquid in the tube.
2. Remove the swab from the tube of liquid and dispose of the swab in the trash. Keep the tube of liquid.
3. Place the QUIKTest Strip on a flat surface.
4. Use the dropper to place one drop of the liquid from the tube on top of the **C** on the test strip.
5. Use the dropper to place one drop of the solution from the tube on top of the **T** on the test strip.
6. Compare the results on the QUIKTest Strip with the diagrams below.
7. Determine if the Covid-19 QUIKTest result is positive, negative, or invalid.
8. Dispose of the used QUIKTest strip in the trash.

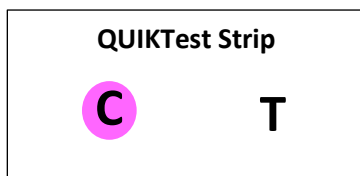
*The C is a control to indicate that the test strip is working properly.*

*The T is the test to indicate whether proteins from the COVID-19 virus are present in the sample.*



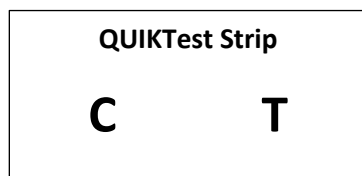
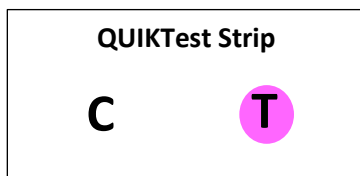
### Positive result

A positive result must show two pink spots—a **C** spot and a **T** spot. A positive test result means that proteins from the virus that causes COVID-19 were found in the sample and it is very likely that the person has COVID-19.



### Negative result

A negative result will show only one spot—a **C** spot. A negative test result means that proteins from the virus that causes COVID-19 were not found in the sample. It is possible for this test to give a negative result that is not correct (a false negative in some people who have COVID-19. If a person has a negative test result but has COVID-19 symptoms, they should consult with their doctor.



### Invalid result

If the C spot does not turn pink there is a problem with the test and the test is inconclusive. The test should be repeated.

## People Who Had Contact with Sam



# Health Information Cards

Cut along the dotted lines and match the cards with the **People Who Had Contact with Sam** sheet.

<p><i>Health Information Card</i></p> <p><b>Angel Perez has asthma</b></p> <p>Having a chronic lung disease can make you more likely to get very sick from COVID-19. Chronic lung diseases can include asthma, emphysema, chronic bronchitis and pulmonary fibrosis.</p>	<p><i>Health Information Card</i></p> <p><b>Nevada Cody has no diagnosed health problems</b></p>
<p><i>Health Information Card</i></p> <p><b>Nilsa Crowder has no diagnosed health problems.</b></p>	<p><i>Health Information Card</i></p> <p><b>Bonny Blankston has cancer</b></p> <p>Having cancer can make you more likely to get very sick from COVID-19. Treatments for many types of cancer can weaken your body's ability to fight off disease.</p>
<p><i>Health Information Card</i></p> <p><b>Dean Trembly is obese and had a stroke</b></p> <p>Obesity and lack of physical activity can make you more likely to get very sick from COVID-19. Having cerebrovascular disease, such as having a stroke that affects blood flow to the brain, can also make you more likely to get very sick from COVID-19.</p>	<p><i>Health Information Card</i></p> <p><b>Mason Blankston has no diagnosed health problems</b></p>
<p><i>Health Information Card</i></p> <p><b>Tia Sierra has Diabetes</b></p> <p>Having either type 1 or type 2 diabetes can make you more likely to get very sick from COVID-19.</p>	<p><i>Health Information Card</i></p> <p><b>Greg Nhan had a kidney transplant</b></p> <p>Transplant patients take medicines that weaken their immune system. People whose immune systems are not functioning properly or people who take medicines that weaken their immune system may not be protected from COVID-19 even if they are up to date on their vaccines.</p>











# Four Signs

**A**

## MASK UP!

Reduce Risk of Transmission

COVID-19 Carrier		Others
	<b>HIGHEST RISK</b>	
	<b>HIGHER RISK</b>	
	<b>LOWER RISK</b>	
	<b>LOWEST RISK</b>	

**B**



YOU ASKED...  
Why should I wear a mask if reputable sources say it won't protect me against COVID-19?

WE ANSWER:  
Your mask isn't designed to protect you from infection; it's designed to help prevent you from spreading COVID-19 to others in your community if you have it and don't know yet.

Dakota | Just Information Center

**C**

## MASKS REQUIRED FOR EVERYONE



VACCINATED AND UNVACCINATED

**STAY SAFE MN**

**D**

## #Mask Kindness

BE KIND, WEAR A MASK



THE KINDNESS PANDEMIC  
<https://www.thekindnesspandemic.org/maskkindness.html>  
@artsyzeln



## At Risk for COVID-19?

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### Part 1: Why was Sam not vaccinated?

Sam Robinson, a 16-year-old cashier at the Town Market grocery store, left work early four days ago. He had a bad headache, his arms and neck ached, and he had a fever. Sam's friends suspect that he has COVID-19. They know that Sam did not get the COVID-19 vaccine. The grocery store manager told Sam that he could not return to work until he had a negative COVID-19 test.

1. Work with your partner to make a list of four possible explanations that Sam might give for why he did not get the COVID-19 vaccine.

***Student answers will vary. Allow time for students to share their answers without critiquing any of the reasons. Do not attempt to correct the myths/rumors that students list.***

***Possible answers include but are not limited to:***

- ***He has heard that the vaccine has bad side effects.***
- ***He doesn't believe in any vaccines.***
- ***The vaccine is too expensive.***
- ***He does not know where to go to get the vaccine.***
- ***He is scared of getting shots.***
- ***His parents would not give their permission.***
- ***He did not think the vaccine would work.***
- ***He does not care if he gets COVID-19.***
- ***He thinks that only people who are old or have health problems need to worry about COVID-19.***
- ***He only uses natural products and the vaccine are man-made and unnatural.***
- ***He has heard that vaccines contain microchips used for tracking people.***
- ***He doesn't like being told what to do.***
- ***He would rather get COVID-19 and get real natural protection***

## Part 2: Does Sam have COVID-19?

The cotton swab in the bag labeled “Sam Robinson” has a sample of nasal (nose) secretions from Sam.

1. Follow the **COVID-19 QUIKTest Instructions** sheet to test Sam’s sample.
2. Does Sam have COVID-19? Explain how you could you tell?

***Yes, Sam has COVID-19. Both the C circle and the T circle turned pink. Note: If some students got a negative test or an invalid test result, discuss possible reasons for this.***

3. Based on the results of Sam’s COVID-19 test, could Sam have put other people at risk for getting COVID-19? Explain why or why not.

***Yes, Sam has COVID-19 and he could have infected others before his symptoms appeared.***

### Part 3: Who is likely to be hospitalized for COVID-19?

The **People Who Had Contact with Sam** sheet shows eight people who had contact with Sam the day before he started having symptoms for COVID-19. How at risk are each of these people for becoming very sick and hospitalized if they get COVID-19?

1. Use the beads to predict each person's risk for becoming very sick and hospitalized. Refer to the **Key for Beads** chart below. Place a bead on the photo of each of the eight people.

Key for Beads

Bead Color	Risk for Hospitalization
Red	High risk (very likely)
Purple	Medium risk (somewhat likely)
Blue	Low risk (not likely)

2. Explain what things you considered when predicting the person's risk for becoming very sick and hospitalized if they get COVID-19.

*Student answers will vary but most will say that very young, very old, or unvaccinated are more likely to be hospitalized due to COVID-19. Allow time for students to share their answers.*

3. What kinds of additional information would help you decide which people are more at risk of being hospitalized if they get COVID-19?

*Most students will say knowing if the people have any health conditions and how much time they spent with Sam.*

#### Part 4: Who is at risk if they get COVID-19?

1. The **Health Information Cards** provide information on each person’s health. Match the cards with the people on the **People Who Had Contact with Sam** sheet. Place each Health Information card next to the appropriate person.
2. Circle the names of the people who are “at risk” of being hospitalized if they get COVID-19.

**Angel Perez**

Nevada Cody

Nilsa Crowder

**Bonny Blankston**

**Dean Trembly**

Mason Blankston

**Tia Sierra**

**Greg Nhan**

3. Could you tell just by looking at pictures of the people whether getting COVID-19 will be dangerous for them? Explain why or why not.

***Most students will say “No” because the health conditions that put people at risk may not be obvious.***

4. What things could “at risk” people do to avoid getting COVID-19?

***Wear a mask, wash hands, get vaccinated, and avoid places where they might be exposed to people with COVID-19.***

5. What things could you do to protect “at risk” people from getting COVID-19?

***Wear a mask, wash hands, get vaccinated, and avoid places where they might be exposed to people with COVID-19. Allow time for students to share their answers.***

## Part 5: COVID-19 testing

COVID-19 affects different people in different ways. People infected with COVID-19 have reported a wide range of symptoms – from mild symptoms to severe illness. Symptoms of COVID-19 may appear between 2-14 days after exposure to the virus. People with these symptoms may have COVID-19. However, these symptoms could also be the result of other diseases such as a cold, the flu, or allergies.

Symptoms of COVID-19 can include:		
• fever or chills	• fatigue	• sore throat
• cough	• muscle or body aches	• congestion or runny nose
• shortness of breath	• headache	• nausea or vomiting
• difficulty breathing	• new loss of taste or smell	• diarrhea

1. It is approximately one week after the eight people were in contact with Sam. All eight of the people have developed at least one symptom of COVID-19. Explain two reasons why they should be tested to see if they have COVID-19.

*If they have COVID-19 they should avoid contact with other people.*

*If they have COVID-19 there is medicine they can take to reduce the symptoms and get better sooner.*

2. The cotton swab in the bags have a sample of nasal (nose) secretions from one of the eight people who were in contact with Sam. Write the name of the person whose sample you will be testing on the line below.

\_\_\_\_\_ *Name of person tested* \_\_\_\_\_

4. Follow the **COVID-19 QUIKTest Instructions** to test that person’s sample for COVID-19.
5. Record the results of the COVID test for the person who you tested in the appropriate row on the **Results of COVID-19 Testing** chart on the next page.
6. Complete the **Results of COVID-19 Testing** chart on the next page by using the results of the tests for other people that has been collected by your classmates.

## Results of COVID-19 Testing

Person Tested	Did <b>C</b> turn pink? (Yes or No)	Did <b>T</b> turn pink (Yes or No)
Angel Perez	<b>No</b>	<b>Yes</b>
Nevada Cody	<b>No</b>	<b>No</b>
Nilsa Crowder	<b>Yes</b>	<b>No</b>
Bonny Blankston	<b>Yes</b>	<b>No</b>
Mason Blankston	<b>Yes</b>	<b>Yes</b>
Dean Trembly	<b>Yes</b>	<b>No</b>
Tia Sierra	<b>Yes</b>	<b>Yes</b>
Greg Nhan	<b>Yes</b>	<b>Yes</b>

7. Based on the information in the chart, which people tested positive indicating that they have COVID-19? Explain how you could tell.

***Tia Sierra, Mason Blackston, and Greg Nhan have COVID. They had a positive test with both the C and T turned pink.***

8. Based on the information in the chart, which people should be retested because the test did not work properly? Explain how you could tell.

***Angel Perez and Nevada Cody should be retested because their C did not turn pink indicating that the test is not working properly.***

9. Based on the information in the chart, which people tested negative indicating that they probably do not have COVID-19. Explain how you could tell.

***The tests for Nilsa Crowder, Bonny Blankston, and Dean Trembly were negative because the C turned pink but the T did not turn pink.***

10. State two reasons why testing is important for someone who was exposed to COVID-19.

*So that they can seek treatment for COVID.*

*So that they avoid contact with people to prevent the spread of COVID.*

11. Free COVID-19 testing is available in most communities. Where could people go to get free COVID-19 testing in your community?

*Student answers will vary. Teacher should be ready to explain sources of free testing in their community.*



## Part 6: Protecting yourself and others

1. The **Four Signs** (A, B, C and D) were designed to encourage people to wear masks when they are likely to encounter others. Which of the signs do you think would be most effective in encouraging people to wear masks? Explain your choice.

*Student answers will vary. Allow time for students to share their answers.*

2. Design a sign, pin, poster, T-shirt, or other item that would encourage people to protect themselves and others by getting vaccinated and staying up to date with COVID-19 vaccines. Draw your idea in the space below or on a separate page. Include information on where people can get free COVID-19 vaccinations and boosters in your community.

*Student answers will vary. Allow time for students to share their designs.*