

## Rocky Research

Duration: two lessons,  
one hour each

### Materials

- Chart Paper and marker
- Computer, projector, and Internet connection
- "Reliable Sources" notebook insert

### Vocabulary

- bias
- reliable source
- rocky shore



### Overview

As a culmination activity after studying the rocky shore habitat, students do a research project on a rocky shore animal. Students learn to assess whether online sources are reliable. Then, they begin their research using the internet.

### Objectives

The student will be able to:

- Explain that some information on the internet is inaccurate;
- Think about and explain why their sources are reliable or not;
- Use the internet to find reliable information about a rocky shore animal.

### Preparation

Students should already have been introduced to the rocky shore habitat, as well as to some of the animals that live there, through books, videos or field trips to the Aquarium or to the rocky shore.

### Procedure

DAY 1: Introduce the term "bias" and discuss "reliable sources."

*Let's say that Julio and Alondra got into a fight at recess. Jose saw the fight. If I ask Julio what happened, what do you think he'll say?*

Wait for student responses.

*What do you think Alondra will say?*

Wait for student responses.

*So who is the most **reliable source** – Julio, Alondra or Jose? Why?*

At this point, students will likely argue. Many will immediately say that Jose is the best source. But someone will probably suggest that Jose is Julio's friend, so he might lie. (If not, you can ask, "If Jose is Julio's friend, would that change your mind?")

This is a good time to introduce the word "**bias**."

One student might ask if there was an adult on duty at recess, and suggest that this would be a reliable source. (If not, you may want to ask if there could be any more reliable sources.)

*It sounds like you all know a lot about how to find reliable information. So when you want to know the answer to a question at school, like “what does an abalone eat?” who/what are some reliable sources?*

On the chart paper, make a chart with three columns. Label the first column “our sources.” Write down all suggestions from students in this column – the library, encyclopedias, the internet, parents, teachers, etc.

*If we get an answer from one of these sources, how do we know the answer is true?*

Label the second column of the chart “reliable because...”, and solicit student responses. Don’t go down the list, but record students’ answers next to the appropriate source. For instance, write “Mr. Smith is an expert on science” next to “Mr. Smith.” It’s okay if some of the spaces, for example the section next to “internet,” is blank.

*I notice you said that Mr. Smith is a good person to ask, but then you said that he’s a science expert. Do you think Mr. Smith is a good source for any type of question, like a writing question, or just science questions?*

Wait for student discussion.

*So are some sources reliable for some things and not for others? Looking at our chart, what are some sources that are reliable for specific things?*

In the third column, write students’ suggestions in the appropriate place, for example, “book questions” next to “librarian,” etc.

*It seems to me that you guys are really good at finding reliable sources in your own lives – you knew exactly why some people in that field would be more reliable than others. And you knew where to look to get reliable information.*

*That’s a really important skill because that’s something scientists, researchers, journalists, politicians and even just people reading the newspaper need to do every single day. And it’s not always easy. Today, we’re going to talk about how to figure out if a source – especially one we find on the internet – is reliable. We want to know if it’s more like Julio, Alondra, Jose, or that teacher on duty.*

*Let’s pretend that you’re doing a report on Martin Luther King, Jr. You go online, and you find this website: on the projector, pull up <http://martinlutherking.org>. Quickly click on the “The King Holiday” link.*

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**THE MISSION OF THE  
MONTEREY BAY  
AQUARIUM  
IS TO INSPIRE  
CONSERVATION OF THE  
OCEANS.**

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*Does this look like a good place to get information about Martin Luther King?*

Many students will see all the text and immediately say, “yes.” Because of how you set up the lesson, some students might ask some questions. If they do ask questions, try to guide them toward the question, “Do we know who wrote this?”

Scan through the website, asking if there’s any way to know who wrote the text. If students don’t see it, point out the small text at the bottom of the site reading “hosted by Stormfront.” Click on the link, which will pull up the website of a white supremacist group. Immediately, some students will recognize this. Others might need an explanation.

*Now, what do you think? Does this look like a good place to get information about Martin Luther King, Jr? Why or why not?*

Wait for student responses.

So do you think everything on the internet is reliable? Right now, talk to your neighbor about some ways we can tell if an internet source is reliable.

Give students time to talk in small groups.

*Tomorrow, we’ll talk more about this. So tonight, think more about how we can tell if a source is reliable, and talk to people at home about it.*

**DAY 2:** Students begin researching, using the internet and a reliable sources form.

*Today, you’re going to research a rocky shore animal. Think about (list prior exposure students have had to the rocky shore, such as: the rocky shore books we read, the rocky shore exhibit we saw at the Aquarium, and the rocky shore animals we saw when we went tide pooling). What are some animals that live in the rocky shore?*

On chart paper, record the rocky shore animals that students suggest. Add any that they may forget. These animals include: sea star, sea cucumber, anemone, sea urchin, and abalone.

*You’ll be able to choose an animal from the list to research. You’re going to have to find out the following information about your animal. Then, you’re going to create a presentation for the class to tell us everything you learned. Your presentation needs to have this information:*

Depending on the grade level of your students and your classroom procedures, give them either a list or a rubric detailing the expected results of their research. A sample list might look like this:

Your presentation will need to include the following information about your animal:

- common name and scientific name

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- consumer type
- prey and predators
- habitat
- adaptations (body parts and behaviors) to survive its habitat
- extra interesting fact

*Today, we're going to start our research using the internet. Based on our last discussion, what are some things we have to remember while doing our research?*

Students should bring up the idea of bias, as previously discussed.

*The internet is a great tool because we can get so much information right away. And we can also share things we know with the whole world. But that means everyone can post anything they want. So we need to be smart, and when we're doing research, we need to think about whether our source is a reliable one.*

*So, from now on, when we do research, we're going to take notes using this form.*

Hand out the attached "reliable sources" form and discuss how to use it.

*If you're looking at a website, how do you know if the source is reliable?*

On a new piece of chart paper, record students' ideas. Try to guide them toward:

- Reputable source (something that we know is good, like the New York Times)
- Found information in more than one place
- Newspapers
- Websites that end in .edu because these are colleges and universities
- Websites that end in .gov because these are hosted by the U.S. government

NOTE: Your students may not know many reputable sources, so as students start researching, your class can create a collaborative list (either hung in the classroom or on a class wiki) that lists websites multiple students agree are reliable. They also may not list all the items above, which is okay. As students start researching, they'll come up with other reasons sources may be reliable – have them add these reasons to the class list.

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Model researching one of the rocky shore animals and recording information on the sheet. Use self-talk to demonstrate how students can think through the questions. Ask yourself things like, “do I know who wrote this?” “Do I know if this website is reputable?” “How do I know that?” Explain to students that if they’re not sure if a source is reliable, they can write a “?” in the “Reliable” column. But they can’t use the information from that source until they talk to you.

*Now it’s your turn. Start researching your research topic, but be sure to use your reliable sources graphic organizer to take any notes. Any time you’re not sure about a source, who can you ask for help?*

Make a list of people who can help students understand if a source is reliable (teachers, librarians, parents).

Invite students to start researching. Depending on your students, you may want to offer them a list of student-centered search engines to begin with, such as:

- <http://www.sortfix.com>
- <http://www.askkids.com>
- <http://www.kidrex.org>
- <http://gogooligans.com>
- <http://www.sweetsearch.com>
- <http://scholar.google.com>

As students use the form (especially at first), they won’t always be correct, so you might want to require them to show you their form before they begin the presentation based on their research. The goal here is to get students thinking about whether their sources are reliable ones – this is a good first step.

*\*NOTE:* Often, Wikipedia becomes a sticking point for educators. This is a good conversation to have with students – let them know that anyone can edit the site. But discuss the fact that this means that experts can (and often do) also edit the site, thus correcting misinformation. In fact, research has shown that, on average, Wikipedia contains about 5% inaccurate information. An encyclopedia, once it’s gone through editing and is printed and shipped to its first shelf, contains, on average, about 5% inaccurate information. In other words, Wikipedia has been found to be as accurate as a printed encyclopedia.

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## EXTENSIONS

- Once your students complete their research, allow them to CHOOSE how they want to present the information to the class. Tell them they can write a paper or a blog post, make a physical or digital poster (<http://www.glogster.com>), create a video, create a podcast, create a Prezi (<http://prezi.com>), create a comic strip (<http://www.pixton.com>), create a cartoon (<http://goanimate.com>) or create a Blabber (<http://blabberize.com>). No matter what they choose, they'll be graded using the same rubric.
- If your students blog or post things on the internet, remind them that other people might want to use them as sources, so it's important that they're as reliable as possible and that they list any sources of their own information.

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RELIABLE SOURCES

| Source<br>(write entire URL) | Reliable?<br>(Y/N/?) | How do you know? | Information |
|------------------------------|----------------------|------------------|-------------|
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