

SCICOMM ORGANIZER

KEY TERMS

- Science communication (scicomm)

KEY SKILLS

- Planning and organizing scicomm

GRADE LEVEL

Middle and high school

NGSS CONNECTIONS

Practices: constructing explanations and designing solutions; obtaining, evaluating, and communicating information

ESTIMATED TIME

15-30 minutes (flexible)

MATERIALS

- Class set of the “SciComm Organizer” (print or upload to LMS) - students can record responses in their science notebooks

SUMMARY

The SciComm (“**science communication**”) Organizer supports students in planning and organizing their scicomm. Using the “5W and H” framework, students will consider the following:

- **What** - the topic
- **Who** - the audience
- **How** - the format
- **Why** - the reasons
- **When and where** - the (assignment) details

Students can use this resource for a range of scicomm, including artwork, blog posts, comics, lab reports, posters, presentations, songs, videos, and more. While we developed the SciComm Organizer to be a classroom assignment, we hope students use it in creative ways. For example, they can use it for community engagement: from writing newspaper articles to creating social media posts for your school-approved channels about what they are learning in science!

LEARNING OBJECTIVES

By the end of this activity, students will be able to:

1. Develop a plan for their scicomm

This activity can be used to support any content standards - the goal is to help students plan and organize their ideas for scicomm.

PRIOR KNOWLEDGE

None needed, but prior exposure to scicomm recommended.

TEACHER GUIDE

BACKGROUND INFORMATION

People communicate science every day - from scientific articles, to pharmaceutical commercials, to weather reports, to influencers on social media, to art campaigns, and even in day-to-day conversations! Science communication or **scicomm** describes how people share scientific knowledge with different audiences, such as other scientists or the general public. Since scicomm takes on many forms, there isn't one ideal or best way to approach it. For example, with a lab report for science class, students likely follow a set process to explain an experiment: start with the Introduction, then present the Materials and Methods, Analysis, and Discussion/ Conclusion. This format often serves a specific purpose (describe an experiment) for a specific audience (often their science teacher) for a particular goal (demonstrate their understanding of a learning target). However, the structure and tone of a lab report isn't an effective approach for every form of scicomm. For example, students in an environmental club might convince their peers to compost and recycle with an art campaign, whereas students in a health sciences club might teach coping skills for final exams with an assembly skit.

Because there isn't just one way to do scicomm, how do we know if something is "good" at communicating science? Should it be accurate, creative, engaging, ethical, impactful, meaningful, relevant, or something else? While there are some shared characteristics across different forms of scicomm, the answer to the first question depends on the communicator (artist, author, blog writer, comic, singer, etc.) and audience. Thus, creating **quality** scicomm takes thoughtful planning, which is why we created this Scicomm Organizer.

MATERIAL PREPARATION

Activity Overview

We created the Scicomm Organizer to supplement other class activities. As a graphic organizer, we suggest students use it before creating their scicomm to brainstorm and visualize their ideas. This versatile organizer can be used throughout the academic year to help students plan and organize their scicomm for a variety of class assignments.

Activity Setup

You can make copies of this organizer for students to write on, or you can use it as a print or digital template and have students record responses in their science notebooks. Depending on your expectations, students can write their responses in complete sentences, bullet points, or draw out their ideas. Although this organizer can be used as a self-directed, standalone resource, we recommend reviewing it with students the first time you introduce it.

TEACHER GUIDE

EXTENSIONS

- Ask students to find a published or publicly-available example of scicomm that relates to the science topic covered in class. Using the Scicomm Organizer, have students make inferences about the example - such as *who* it was created for and *how* the author adapted their communication for the audience. Then, prompt students to evaluate its effectiveness by reflecting on how the different elements (what, who, how, why, when and where) worked together. Because quality is subjective, encourage students to identify what they liked or what could be improved - rather than just saying if the example was “good” or “not.”
- Have students use the Scicomm Organizer to communicate what they are learning in science class or science-related clubs to different audiences, such as your principal, other science teachers, students’ families, the community, etc. Then, share the students’ work with this audience and ask for feedback regarding the presentation of ideas and explanation of the science topic. Present the feedback to students.

ASSESSMENTS

- While creating their scicomm, encourage students to revisit their Scicomm Organizer and reflect on the following questions (have students record their responses either directly on the organizer or in their science notebooks):
 - Am I on track with what I wanted to achieve with this scicomm?
 - What is working well, and why? What challenges am I encountering, and why?
 - What parts of the science content do I know well enough to effectively communicate, and where do I need to learn or understand more so I can share it with others?

Review student responses and identify patterns among them to uncover possible teaching topics. For example, if students are struggling with time management, use this as an opportunity to talk about chunking projects and setting realistic goals.



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STUDENT WORKSHEET

SCICOMM ORGANIZER

Instructions: Read the descriptions below. This will help you respond to the questions on the following pages.

SECTION ONE: WHAT?

Sometimes, you need to add lots of details or background information to help your audience understand a topic. Other times, too many ideas may confuse or distract your audience from your main point. As you think through **what** to communicate, ask yourself whether the idea is big (main point), supporting, or extra.

SECTION TWO: WHO?

Just like you might change your word choice or tone when talking with peers versus a teacher, “knowing” your audience helps you design scicomm that grabs their attention and meets their expectations or needs. While you will not know *all* the background knowledge, interests, experiences, etc. of your audience, reflect on **who** you want to communicate to. What might the audience want to learn or experience? What might they already know or think? It is also necessary to think about your own experiences, ideas, interests, knowledge, skills, etc. because these will influence your work. We all bring our own perspectives and voices to science.

SECTION THREE: HOW?

There are many types of scicomm: art (dance, drawings, paintings, pictures, sculptures, etc.), books (fiction or nonfiction), lectures, podcasts, music, videos (features or reels), written reports, and so on. Different formats may appeal to different learning styles: auditory, visual, written, or kinesthetic, and combining these styles can reach a broader audience. Identifying **how** you will present your ideas should go beyond simply identifying the format. Include details such as the length or duration and mode of presentation (physical or digital).

SECTION FOUR: WHY?

As the communicator, consider your motivation for the project so that you can accomplish what you set out to do, whether that is to educate, critique, inspire, persuade, etc. While you may create scicomm for school, extracurriculars, or entertainment, the **why** in this section refers to how you want your audience to respond.

SECTION FIVE: WHEN and WHERE?

Planning **when** you need to share your work and **where** you’ll share it (physically or digitally) are key steps in this organizer. Some projects may take more time than others, so it’s helpful to be realistic about how much time you will need - especially to produce quality work.

STUDENT WORKSHEET

SCICOMM ORGANIZER

This resource will help you plan and organize your scicomm. For each section (5 total), respond to the corresponding questions. If you are using this for the first time, it may be helpful to work through the sections in order. Depending on your teacher's instructions, you may write in full sentences, add bullet points, or draw.

This organizer is to help you brainstorm and capture your ideas - it doesn't have to be perfect! Once you have completed all sections, it is time to start creating. It is all right - and normal - to not follow this organizer exactly as planned once you start your project. Perhaps the format (blog, comic, poster, video, etc.) doesn't align with your goals, or you need to rethink your audience. Looking at your work through a constructive lens and being open to change can help you produce quality scicomm.

SECTION ONE: WHAT?

- ☐ What is your main idea? Describe it in 1-2 sentences.

- ☐ What key words, definitions, or descriptions does someone need to know to understand this?

- ☐ What fun facts can you include? Think of dates, locations, people, etc.

- ☐ What sources are you using (class materials, textbooks, online resources, etc.)?

STUDENT WORKSHEET

SECTION TWO: WHO?

- ☐ Who are you as a communicator? What experiences, interests, knowledge, skills, etc. do you bring to this project?

- ☐ Who is your audience? For example, what is the target age (younger grade level, peer, teacher, etc.) or role (educator, hobbyist, scientist, etc.)?

SECTION THREE: HOW?

- ☐ How will you mostly communicate your topic? For example, blog, comic, poster, video, etc.?

- ☐ How else will you communicate your topic? What other resources will you create or use - for example, adding pictures to a video?

- ☐ How will you design your scicomm? What will it feel, look, sound, etc. like?

- ☐ How can you change *what* you're communicating, or *how* you're communicating, to make sure your audience can engage with and understand the scicomm?

STUDENT WORKSHEET

SECTION FOUR: WHY?

- ☐ Why are you sharing this science? Is your goal to educate, critique, inspire, persuade, etc.?

- ☐ Why is this your goal?

- ☐ Why did you choose your specific audience?

- ☐ Why did you choose your particular format? Is it because it's a style you're interested in, because you think it will be effective, because it resonates with the audience, etc.?

SECTION FIVE: WHEN and WHERE?

- ☐ When is this scicomm due? How much time do you think it will take to create this?

- ☐ Where will you share this? Do you need a physical copy, or can you upload a digital copy?