

The Genre STEM Switch Guide

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INTRODUCING GENRE AS A CONCEPT

The goal of this activity is to provide students with a concrete understanding of the concept of genre as it applies in the sciences, how it is related to communication modes, and how leveraging genre conventions can impact the efficacy of their message. To begin the exercise, we first need a definition of “genre.” As such, the introduction begins with the following discussion:

1. *“We typically find the concept of genre applied in the arts, in categories such as literature, movies, and music. Let’s work together to complete this table. What are some examples of genres in each of those areas?”* Complete table.

Category	Example Genres
Literature	[Sci-fi, Mystery, Biography, Manga]
Movies	[Action, Comedy, Romance, Anime]
Music	[Country, Rap, Jazz, Ska]

2. *“When we think about genre, what separates each of these from the others?”* Here, we are trying to drive students to a common understanding of genre, namely that there is a set of conventions that both the communicator/artist and the audience agree upon and provides a common ground for both parties to relate. It may be best to focus on a particular category and genre to unpack this fully. For example, using “science fiction books” as the focus here, some possible discussion points might include: It gives you an idea of the setting (i.e. outer space or far into the future); It tells you the values of the society (i.e. scientific progress and innovation); It includes common tropes (i.e. robots wrestle with prime directives).

Genre Convention	Example Conventions for Sci-Fi literature
Setting	[Space station, Far into the future, NASA military camp]
Conflict	[War with robots, Race to a cure for disease, Aliens stealing resources]
Props/tropes/themes	[Sciencey language, Sciencey gadgets, Time travel]

3. “Using these defining aspects then, how do they apply to science communication? What are the genres that we find in STEM?” Here, it may be helpful to again complete a table and use the following conventions as a guide.

STEM Convention	Example STEM Genres
Setting (Audience)	[Grant reviewers, 3rd graders, General public, Hiring committee, Grandparent, Children’s Educational TV, Patients]
Conflict (Problem)	[Solve research question, Convince policy makers, Educate public, Secure funding]
Theme (Format)	[Scientific article, news article, YouTube video, Twitter/Social Media post]

Once you have identified and discussed different genre conventions and what their science communication counterparts are, it’s time to define “genre” in STEM. Ask the students if they can come up with a definition for “genre” that would encompass the different science communication applications they have already identified.

Our example definition of “genre” in STEM is:

/ˈZHänrəl/ - noun -

a set of familiar, accepted conventions for conveying and receiving science content

Now that we have defined “genre” in STEM and identified how it can inform science communication practices, it’s time to move on to the Genre Switch Game!

THE FRAMEWORK OF THE GENRE SWITCH GAME

The Genre Switch Game is a highly interactive and improvisational exercise whereby students will alternatively act as speakers and audience, giving short (2-3 minutes) informal talks on a STEM topic of their choice. On their turn and throughout their talk, speakers will be paused and provided with a new target genre. Their task is to switch their approach to accommodate the conventions of that new genre.

The key components of the game—each critical to its success—include (1) choice of source material for the talks, (2) generation of a genre list to choose from, (3) setting the ground rules for a supportive environment, and (4) establishing roles in the game.

(1) Speaking Topics and Sources

To encourage a supportive environment, students should be allowed to choose the topic for their brief talk from a list of relevant categories supplied by the instructor. Some example sources of material for speakers are:

Secondary School	Undergraduates	Graduate Students/Postdocs
<ul style="list-style-type: none"> - A recent lab exercise - A scientific news report or documentary reviewed in class 	<ul style="list-style-type: none"> - An experiment or finding discussed in class - Scientific article/journal club 	<ul style="list-style-type: none"> - Research project - Scientific article/journal club

(2) *The Genre List*

After the introduction discussion is complete and students have created a definition of “genre,” they should then refine their list of genres from the STEM Conventions table for use in the Genre Switch Game. Review the list to highlight those that are best applied in a verbal/talk setting. Display the final list on a board or slide for the students to see during the game.

(3) *Ground Rules of Engagement*

Next, the instructor sets the rules of engagement to establish a supportive environment. The rules we used are:

- Use supportive and inclusive language only.
- You cannot be wrong in this exercise. The objective of the exercise is to explore different uses of genre in communication, not to get the details of the STEM topic correct.
- Do not negate the contributions of others in the discussion or game. If you disagree with someone’s viewpoint, respectfully contribute your own view to the discussion.

(4) *Roles in the Game*

- Facilitator: The facilitator is in charge of managing the timer and supplying new genres to the speaker. This role is best played by the instructor but is also a great option to give to a student who is too anxious to participate as a speaker.
- Speaker – Each student will have a turn where they are the speaker. They are to give a brief (2-3 minutes), informal talk on the topic of their choice. They begin this short talk as if they are talking to their classmates (no genre suggestion to begin). Throughout their talk, the facilitator will pause them and give a new genre for them to accommodate. The student will continue from where they were in their mini talk, adjusting their communication approach to accommodate the new genre condition.
- Audience – Every student in the audience will have some form of feedback card (see Note 4 from the *Science + SciComm + Work* book chapter). As they are listening to the speaker, they should decide whether they believe the speaker is successfully accommodating the current genre condition or not. Students hold up the green/AWESOME card when the speaker is doing well, while they hold up the orange/ADJUST card when the speaker hasn’t effectively tailored their approach to the

current genre condition. Because the speaker only has a short turn, it is important that the audience members do not interrupt and instead use their cards to give feedback.

--In the case of multiple students being unable to participate as speakers, the facilitator role can be accompanied by two assistants: one of timer and one of genre master. These roles could rotate among students throughout the game.--

- Optional: Timer - The Timer's role is to ensure the speaker does not go over their assigned time (2-3 minutes) and receives a new genre 4-5 times during their talk.
- Optional: Genre Master - The Genre Master's role is to provide the speaker with a new genre at the appropriate times indicated by the Timer.

PLAYING THE GENRE SWITCH GAME

The most effective way to begin the game is for the instructor to be the first speaker. One student will act as the facilitator, pausing the instructor at random intervals to assign a new genre from the list generated during the introduction discussion, while the remaining students provide live feedback to the instructor with their feedback cards. This often releases much of the stress or pressure students feel before participating, especially if the instructor is improvising just as the students will be.

DEBRIEF DISCUSSION

Often during the Genre Switch Game, energies will rise, and the classroom environment may get a little silly and elevated. This is phenomenal, as it greatly benefits the activity's impact on the students. However, the guided debrief discussion thus becomes an essential part of this activity. It serves to regroup and return the class to introspection so students can reflect on the intentions of the exercise and useful lessons learned. Below are some suggested discussion questions that prompt the students to reflect on the exercise and what they learned from it, as well as an intentional wrap-up that highlights the relevance of the game.

1. *"How did that feel?"*
 - a. This question serves to bring the students into an introspective thinking pattern. It also allows the class to acknowledge any apprehensions they may have felt and positively reflect on the outcome of the game.
2. *"What did you find easy or exciting, and what did you find difficult during this game?"*
 - a. This question will often lead to discussion on what is difficult when trying to accommodate or even identify genre, particularly when the content of the talk is complex. It is also the moment when students can voice what they learned about genre in science communication and provide insights that other students may not have considered.

3. *“What did you notice doing here that could be helpful when preparing a talk or paper (or other communication projects your students may be completing in the future)?”*
 - a. Some example answers for this question could be:
 - i. Changing your tone based on your audience – if you are writing a grant, you would use a formal tone, but if you are talking to a 3rd grader, that same tone would come across as boring
 - ii. Adjusting the level of detail based on the format – if you are writing a scientific paper, you must provide all the minute details that give your research validity. However, if you are giving a seminar presentation on that same project, you would pass over those fine details to instead focus on the main findings and implications.
4. *“Do you have any thoughts we have not discussed yet?”*
5. Below is our wrap-up comment for the activity. However, feel free to end the discussion however you see fit, particularly if the students have already summarized the lessons in a comprehensive and impactful way.

“Here, we practiced adjusting how we communicate within different genre conventions. This is an essential skill for a scientist, regardless of discipline or career. Often, you will be the expert in the room—you know more about your work or specialization than anyone else, even though it might not always feel like it. If you are a researcher, there’ll even be times when you are the first person in the entire world to know something. If you want to share that knowledge, whether it’s to get funding or publish a paper or change laws, you have to be able to bring your discovery to your audience and meet them within their genre. Sometimes it’ll take little effort, like if you’re talking to your research advisor. Other times, it might be difficult because your audience may contain advisors, peers, members of the public - a whole amalgamation of people from different fields and different backgrounds, and your goal as the speaker will be to get as many people in that audience as possible to understand your science. The only way to do that is to think about how you’re going to communicate it. What different “genres” can you use that will not only reach but also have an impact on as much of your audience as possible?”

OPTIONAL: THE EVALUATION EXIT TICKET

At the end of class, ask students to retrieve the AWESOME and ADJUST feedback cards, turn them over, and respond with the following:

“On the back of the AWESOME card, write down your name at the top of the card and a brief definition of genre in STEM. On the back of the ADJUST card, write down your name and note which STEM genre(s) you found most difficult to use and why.”

For full credit, ensure that the definition incorporates the concept of (1) an agreed upon set of conventions and (2) that genre involves both communicator and audience being familiar with those conventions. This exercise is not intended to be punitive but to maintain engagement and help enable the students to walk away with key points.