



# WRITING A DNA SCREENPLAY AND MAKING A MOVIE! LESSON PLAN.

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**Time:** ~1½ to 1¾ hours  
**Grade Level:** Grade 6 and 7.  
(Kids are set in groups of 4 to 6).

**Materials:** pencils, paper, handouts (attached)  
**Equipment:** Clapper, video camera, (lab) props  
**Staff:** 1 writer and (ideal) 1 camera person.

*This activity is essentially designed to showcase the steps involved in creating a short film, where students will participate in the writing, acting and production. The activity also presents a number of writing prompts that have been designed to bridge the previous DNA activity<sup>1</sup>, which will hopefully lead to discussions on how scientific fact can relate to the creation of science fiction.*



## 1. The role of science fact in science fiction (10 minutes)

It's usually a good idea to have a short talk to set up the general premises of this activity, and in particular to get students thinking about the connections between science and writing. Here, you can introduce the idea of how scientific possibilities have created grounds for great science fiction. There are lots of excellent examples of this in popular culture, where you can show slides of popular media characters to solicit recognition. These might include:

- Mutants (Spiderman, Powder Puff Girls) who have changes in their DNA structure caused by stressors in such as radiation.
- Clones who (Star Wars clone army, Jurassic Park dinosaur) have had their DNA exactly replicated

Leave off your presentation or discussion with the question of: Ideas we encounter in media and literature often have a basis in real science: does having some familiarity with the real science therefore become helpful?

*Note: In our SCLS fieldtrip, this initial section is actually given at the start of the day, as part of general introductory remarks, alongside a mini presentation on genetics, which is*

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<sup>1</sup> See <http://www.bioteach.ubc.ca/portfolio/science-creative-literacy-symposia/> (accessed April 22<sup>nd</sup>, 2015)

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*immediately followed by the genetics experiment (i.e. prior to the creative writing). However, you can also use this lesson plan as a stand alone activity.*

We want to explore what happens when genetics encounters creative work, and creative work incorporates genetics. To do this, we can engage in a class discussion where students think about the following types of questions:

- *Do you think genetics is accessible to most people?*
- *Do science experiments have much room for creativity?*
- *Does genetics come up much in creative work such as films, books and comics?*
- *Why do people care so much about genetics?*
- *Can we use some of those fancy images and words and information we got from science activities to inspire creative work? (In the case of the SCLS, words like MOLECULAR BIOLOGY and PIPETTEMAN and REAGENTS?)*

## **2. Script mechanics (10 minutes)**

Now we shift gears a little, and look at the process of script writing. Ask the students: what makes a good script? With this question, try to hit upon a number of key elements.

1. Engaging characters (Dialogue)
2. A story with an arc. In other words, a clear beginning, middle, and end
3. An interesting setting
4. Movement (action)
5. Direction of scenes (i.e. is the dialogue and setting broken up in specific ways, requiring editing later on) – note in the fieldtrip case, we try to encourage a script that is one continuous take.

Next, the class will take a look at an example premise and script, to see if they can make note of these various elements.

*Example premise:*

“Dave (a grade 7 student) needs to take a big math test tomorrow. But he’s not ready for the test! He goes to find his friends Alison and Mike to see if there’s anything he can do to change his fate. He finds Alison and Mike (also in Grade 7) in the school’s science lab. What can Dave do? And will Alison and Mike be able to help him?”

Solicit 3 volunteers to help you enact/read the script out loud (script is attached). Ask the class the following:

Who was the main character?



What was the problem?  
How was the problem solved?  
What was the beginning of the story?  
What was the middle of the story?  
What was the ending of the story?

This sets up the expectation of acting later in the class, and also familiarizes learners with elements of a script.

Now, you need to clarify with the class, other components required to actually produce the film. This includes: having a DIRECTOR, a WRITER, ACTORS, PROPS and a CAMERA/CAMERA OPERATOR.

### **3. Time to get organized (<10 minutes)**

Students will now split into groups of 4 to 6. If possible, groups should be organized beforehand to include both introvert and extrovert types as this will greatly help in the group dynamics. Each group will then receive a “premise” description (see attached). This is often helpful in speeding things up, but this activity also works if you choose to let the students come up with their own ideas. With the “CREDITS” handout, they will also begin assigning their tasks. To facilitate this, use the following ground rules:

Everybody is an ACTOR with a specific role (in the event of an extremely introvert student, who really doesn't want to do this, then that student could be given a small role, or could be exempted from acting, if given the task of being the DIRECTOR).

Otherwise, the DIRECTOR is the student whose birthday comes up next.

The WRITER is the person who has the neatest and fastest handwriting.

Please stress that EVERYONE contributes to the story, but that the DIRECTOR has final say and is the one that gets to decide if there are disagreements.

### **4. Writing their scripts (30 minutes)**

For this section of the activity, the students will work together to further define their roles, brainstorm ideas, and get down to actually writing the actual script. Some guiding thoughts as they do this include:

- Read your scenario carefully.*
- Who is/are the main character(s)?*
- What is the problem?*
- How can the characters solve it?*
- Does the problem go away in the end, or does it become a different one?*
- Does the story have a satisfying end?*



*-DO NOT SIMPLY ACT OUT THE PREMISE. It's only the beginning of the story. Make a middle and end too.*

Note that this part of the lesson plan tends to be the most frenetic, and it is helpful to be circulating the room offering encouragement or help where needed. In general, an average script tends to be only about 2 to 3 pages long.

### **5. Props, direction and rehearsal (15 minutes)**

In general, it's a good idea to let the students know where filming will occur (i.e. the specific set), and include some time for the students to rehearse their script, as well as map out how they plan to move during the performance. This might involve working out where folks will stand if there is a narration part, or entry and exit elements. Emphasize the fact that the DIRECTOR is the one responsible for making final decisions in this regard. Depending on where this activity is taking place, you can also set guidelines on appropriate use or access to props in your space. As well, if a photocopy machine is within striking distance, it is often helpful to be able to make multiple copies of the script for the students.

### **6. ACTION! (~5 minutes per group)**

Always make sure there is time for students to perform their work for the class. In general, each page of script will take about a minute to perform. Based on our experience, about a 5 minute window for each group seems to suffice for set-up, quick run through, and final performance. Remember to remind them of the preference of the performance being done as one continuous take.

This section will require the use of a video camera with extended (boom) microphone if possible. As well, the DIRECTOR will be given the clapper. You can highlight how this is actually a remnant of a time when video and audio were recorded separately, and the "clapping" sound was actually used to synchronize the two. These days, it's often used as an additional way to label the particular scene/take.

Remind everyone to think about the camera and movement (is my back facing the camera?), as well as re-emphasize the importance of speaking loudly.

Before the DIRECTOR yells ACTION, usually one of the instructors will issue out a QUIET ON THE SET call (really loudly if possible). DIRECTOR will end take by yelling CUT.

At the end of each performance, make sure the class applauds the group for their hard work!



*Please be mindful of permissions required to video tape the students. In our case, we video tape the performances, provide these files only to the teacher for private classroom showing, and then immediately delete the files.*

### **7. And that's a wrap! (<5 minutes)**

Thank the class for their hard work and creativity, and as a wrap up (if there's left over time), you can ask the class if they have any questions for the instructors about DNA and/or writing.

**Setting**            UBC Molecular Biology DNA lab  
**Characters**        ALISON, DAVE, MIKE, all in their teens

*INT. LAB, DAY*

*ALISON is examining the contents of a test tube. MIKE is swabbing his cheek. DAVE walks in.*

DAVE: What's in there? Spit?

ALISON: Yes. My spit, to be exact.

DAVE: Gross!

MIKE: I'm teaching Alison how to isolate her DNA in a test tube.

*ALISON shows test tube to DAVE. DAVE grabs it and drinks it.*

ALISON: Oh my god. Dave! That is so gross!

DAVE: I need to be smart like you, Alison. We have that big math quiz tomorrow. Your spitty DNA is going to meld with mine and give me super math powers! I feel it already! Ask me a math question. Any question!

MIKE: Okay, okay, um...what is 1,000 divided by 64 to power of 24?

DAVE: I totally know that! It's 5 trillion, 645 million, nine hundred and ninety-one!

*ALISON and MIKE look at each other. ALISON shakes her head.*

ALISON: Oh my god, Dave. No way!

DAVE: Did it work? Did I get it?

ALISON: Not even close.

*Laughter.*                    *END*

# CREDITS

Group Name:

Title of your Movie:

Writer:

Director:

Role 1:

Role 2:

Role 3:

Role 4:

Role 5:

## What's Your Story?

*So today, we are going to make some short genetic movies that tell a quick story about why it's important to pay attention and stay informed with genetics. Here is your creative prompt.*

***DO NOT SIMPLY ACT OUT THIS PREMISE.***

***It's only the beginning of the story.***

***Make a middle and end too.***

***The whole team brainstorms the project together!***

At your school's science fair, you and your friends have a chance to get a genetic test. This involves taking a blood sample. However, when you do it and get the results back, you all find out that you are actually related to each other. How do you all react? What would you say to each other? What would you say to the person administering the genetic test?

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Someone has stolen computers from your work, and it's up to the forensic police to figure out who is responsible. How might DNA fingerprinting have a role in solving this crime? Do you solve the crime? When the person who is guilty is identified, what happens next?

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Three kids are hanging out. What are they doing? Having lunch? Playing video games? Suddenly, one of the kids tells the other kids that she (or he!) is a superhero with special powers. These special powers are due to a genetic mutation. What are the special powers? What do the other kids think of this, and what would happen next?

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One of you is working in a lab on an experiment that aims to make a clone of yourself. It's a success! What happens next? Will the person make clones of him or herself? What do these clones do to the original person? What do they do to each other? Do they fight? Start a rock band?

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A group of you go into a restaurant for dinner. You noticed that everything on the menu is genetically modified. What kinds of food would be there? What would you order? What if the food was mutated to exaggerated levels? Are they tasty? What happens next?

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A strange airborne virus has descended on a city, making everything that everyone tastes seem like dark chocolate. Is this a good thing? Is it a bad thing? How does this affect daily life?

A UBC student discovers the genetic code to make the virus dormant. Should (s)he use it and let everything go back to normal?