

# Learning Genetics Guide Sheet

(For Educators)

**Subject:** Science

**Topic:** Genetics

**Technology:** Video Production

## Prepare

### Step 1:

- Review: The **Tight Genes & You** Lesson Plan and tutorial series **Video Production**.
- Preview: The **Career Bytes** episode **Brandon Oldenburg, Executive Creative Director, Reel FX** and the **Kids in Action: 5-in-5 Microphone Usage** videos.
- Reserve: cameras and related hardware (e.g. batteries, wires and tapes)
- Ensure: Editing software is installed on computers and student headphones are available.

**Step 2:** Brush up on, or learn, applicable digital video skills using the video tutorial series – **Video Production**. Practice using the camera, related equipment and software.

## Implement

**Step 3:** Introduce the topic by showing the **Career Bytes** video: **Brandon Oldenburg, Executive Creative Director, Reel FX**.

**Step 4:** Assign viewing of the **Video Production** learning series to your students. Allow time for students to work through these videos and practice hands-on with tools.

**Step 5:** Group students into teams and assign the lesson plan **Tight Genes & You**. Teams will work through the various research, planning and creation phases of the project.



## Wrap Up

**Step 6:** Students will present their final projects to the class. Facilitate a class discussion on genetics and related current issues. Discuss real world applications of technology use and how they can improve their productions. View the **Kids in Action** video **5-in-5: Microphone Usage** video.

## Review

**Step 7:** Assess student projects, team work and participation using tools provided within the learning resource (and others you create if desired).

**Step 8:** Reflect on how the project was implemented, student engagement, skills learned, the resources and the lesson plan. What might you do differently next time? Document it and write it down.

## Next Steps

**Step 9:** Send feedback and sample student project(s) to [staff@NortelLearnIT.org](mailto:staff@NortelLearnIT.org)

**Step 10:** Find another **Nortel LearnIT** lesson plan and technology unit to work on.



The following Nortel LearnIT resources are referenced in this outline.

### **Lesson Plan: Tight Genes & You**

Subject: Science / Biological and Life Sciences

Series: Video Production: Grade: 9 – 12

**Technology Training: Video Production**, for both teacher and student use.

Series: **Video Production**, Using editing software: Non-linear editors.

Subject: Educational Technology / Integrating Technology

**Series Videos Include:** *(All videos include printable step-by-step instructions)*

#### **Pre-Production:**

1. Overview
2. Introduction
3. Scripts
4. Planning a Production
5. Shotlists/Storyboards
6. Pre-production Project

#### **Production:**

7. Getting it Done
8. Lighting
9. Cameras
10. Digital Formats
11. Production Sound
12. Production Project

#### **Post-Production:**

12. Capturing Video
13. Editing (Premiere & iMovie)
14. Sounds Editing
15. Exporting Video
16. Titles and Credits
17. Summary
18. Project Wrap-up

#### **Suggested Extended Content:**

**Career Bytes** (web video) [Brandon Oldenburg](#), Executive Creative Director, Reel FX. [04:22]

**Kids in Action** (web video) [5-in-5: Microphone Usage](#). [04:37]

#### **Software:**

Software used in training videos for this series: **Adobe Premiere; iMOVIE.**

Demo copy available from <http://www.adobe.com/products/tryadobe/main.jsp>

#### **Curriculum Connections:**

##### **ISTE NETS for Students**

**Technology productivity tools** Students use technology tools to enhance learning, increase productivity, and promote creativity. Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

**Technology research tools** Students use technology to locate, evaluate, and collect information from a variety of sources. Students use technology tools to process data and report results. Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

#### **Science Standard:**

**Grade 9-12: Science Biology>Nature of Biology:** Explains the significance of biology (e.g., impact on daily life). Defines biology and major divisions (e.g., botany and genetics). Genetics (Patterns of Inheritance) Describes patterns of inheritance and genetic engineering. Relates normal patterns of genetic inheritance to genetic variation (e.g., crossing over). Relates abnormal patterns of genetic inheritance to genetic disorders and disease (e.g., nondisjunction). Lists significant contributions of genetic engineering to agricultural and medical practices. Genetics (Mendelian Genetics) Defines important genetic terms. Given parental genotypes, predicts the phenotypic, and genotypic probabilities of subsequent generations.