Introduction

The purpose of this guide is to help teachers successfully integrate stop-motion animation productions into their classrooms. It has been designed to be used in conjunction with the National Film Board of Canada’s (NFB) online StopMoStudio – Stop-Motion Animation Workshop.

Learning to create stop-motion animation is easy, enjoyable and can be readily adapted to different age groups and settings. We encourage teachers to employ this creative technique in their classrooms.

Using Technology Effectively in the Classroom

The use of technology in the classroom offers tremendous potential to positively impact both teaching and learning. However, using technology without a clearly defined purpose will not be helpful in attaining these desired goals. Technology and related pedagogy must be integrated properly to produce effective results. Technology use supports a constructivist approach to teaching and learning. As such, interactive strategies that support this approach have been incorporated into the design and development of the stop-motion animation instructional guides.

Reasons to Use Technology in Your Classroom

There are many good reasons to integrate technology in your classroom. In Integrating Educational Technology into Teaching (2009), authors Margaret D. Roblyer and Aaron H. Doering identify four main benefits:

1) motivated students
2) enhanced instructional methods
3) increased productivity
4) acquisition of technical skills

The Stop-Motion Animation website supports the above objectives as follows:
1. Motivate Students
- Encourages high-level learning—helps focus students’ attention;
- Helps students see relevance of subject matter by applying abstract theory and skills to real-world practice;
- Promotes active application of materials;
- Provides incentive for students to produce optimal works through electronic publishing to websites.

2. Enhance Instructional Methods
- Provides opportunities for exploration and collaborative problem-solving;
- Helps students visualize difficult concepts or topics;
- Helps learners visualize/make connections between skills and real-life applications;
- Allows students to study subjects in unique and interesting ways;
- Provides access to alternate and distance-learning opportunities;
- Provides access to online experts;
- Helps improve media literacy skills.

3. Increase Productivity
- Provides speedy access to information sources;
- Encourages self-directed learning and ownership of the learning process;
- Saves money on consumable materials.

4. Acquire Technical Skills
- Helps students improve their “information age” skills: technology literacy, information literacy and visual literacy.

Start Using Stop-Motion Animation Across the Curriculum

Stop-motion animation is not an activity restricted to art or technology classes. We advocate that any classroom can integrate this technology, as long as there is a topic that supports a good idea for a story or lesson. Stop-motion animation can be incorporated into classrooms from cross-curricular and interdisciplinary perspectives, as stop-motion animation activities can be easily shared between different but complementary classroom subjects. Common themes may overlap.

Target subject areas include:
- English
- Math
- Science
- Social Studies
- Health
- Arts (Art, Music, Theatre)
- Technology
- Media Literacy

For advanced curriculums—grades 7 and up:
- English
- Math
- Science
- Social Studies
- Health
- Arts (Art, Music, Theatre)
- Technology
- Media Literacy

How Do We Integrate Stop-Motion Animation Across the Curriculum?

The information in the following table provides ideas to help you integrate stop-motion into the various target subject areas. Examples of previous works in each subject area are also included.
Stop-Motion Animation Workshop

Start using Stop-Motion Animation across the curriculum

Subject Ideas for Stop-Motion Animation Integration

2. Math

Creating Stop-Motion Animation can promote:
- Visualization of math concepts to make abstract ideas more concrete and help students visualize solutions to problems;
- Connections between abstract geometry and objects in the real world;
- A better understanding of the nature and properties of transformations and symmetry through the creation of artistic objects.

Students may create animation that:
- Visually exemplifies how math can be used to solve real-world problems, e.g., take measurements, make conversions, work with fractions, decimals, percentages, estimation, volumes, measure mass, motion, weight, balance;
- Visually exemplifies mathematic principles such as the isosceles triangle, pi, or Pythagorean theorem;
- Demonstrates the transformation of objects;
- Illustrates a strategy.

Examples
- Math Geometry Angles (1 min 33 s)
- Stop Motion Rubik’s Cube (1 min 10 s)
- Math Art (1 min 30 s)
- Stop Motion Square Roots (1 min 57 sec)

3. Science

Creating Stop-Motion Animation can:
- Provide a means of rendering a scientific concept in a visual format, thus helping to make it more easily understood;
- Help students visualize complex scientific concepts in motion, to show how these concepts actually work (e.g., movement of atoms).

Students may create animation that will:
- Help them visualize a part of the human anatomy and how it works;
- Help them visualize a molecular structure or growth of plants or animals, e.g., butterfly metamorphoses, how fertilization occurs, bees pollinating flowers;
- Help them visualize how levers, pistons or pulleys work;
- Simulate chemical reactions;
- Help them visualize molecular concepts, electrons, protons or microscopic work.

Examples
- Gas Exchange Claymation (2 min)
- Facilitated Diffusion Stop Motion Animation Project (15 s)
- Cell Mitosis Stop Motion Movie (37 s)
- Runaway (9 min 10 s)
### 4. Social Studies

**Subject Ideas for Stop-Motion Animation Integration**

**Creating Stop-Motion Animation Can Promote:**
- Visual representation of complex and abstract historical or geographical concepts;
- The study and depiction of cultural and historical roots;
- The exploration of social issues and problems to promote change;
- The exploration of events from different perspectives;
- The representation of different peoples, places, and environments.

**Students May Create Animation That:**
- Tells stories about lives, events, places, environments, or eras;
- Visually depicts world discoveries or significant historical events;
- Represents a certain time period in relation to a famous historical figure;
- Depicts controversial topics such as world disasters or wars;
- Depicts geographical concepts.

**Examples**
- Mount St. Helens Eruption Claymation (47 s)
- The Destruction of Pompeii (2 min 19 s)
- Black Soul (9 min 47 s)
- Wapikoni mobile – Le vieil homme et la rivière (5 min 9 s)

### 5. Health

**Subject Ideas for Stop-Motion Animation Integration**

**Creating Stop-Motion Animation Can Promote:**
- Visual aids as a powerful means of displaying health-related information;
- Empowerment of students to make improved health choices;
- Students seeing connections between ideas about health and real-life practices;
- Students advocating for good health practices;
- Self-reflection and increased motivation for students to lead healthier lifestyles.

**Students May Create Animation That:**
- Depicts a healthy activity or lifestyle;
- Addresses a social or self-esteem issue;
- Presents a health promotion topic;
- Addresses unhealthy behaviours—such as bullying, smoking, addiction, eating disorders, peer pressure;
- Provides a lens into the consequences of poor health choices, e.g., lung cancer, obesity, osteoporosis or heart disease.

**Examples**
- Stop-Motion Animation – Eat Healthy (1 min)
- It All Adds Up! (2 min 3 s)
- Bullying – School Project (1 min 59 s)
- Smoking Kills – Stop Motion (23 s)
- The Sniffing Bear (7 min 47 s)
### 6. Arts/Music/Theatre

**Creating Stop-Motion Animation Can Promote:**
- Exposure to new and exciting modes of communication and artistic expression;
- Unique and innovative opportunities for students to share artistic skills;
- The expression of unique capabilities and creativity in the production of artworks;
- Unique aesthetic emotional responses to problem-solving;
- The exploration of different art perspectives;
- The association of the arts to related cultures and traditions.

**Students May Create Animation That:**
- Provides a representation of an artwork from a particular era or place;
- Provides examples of different art forms;
- Portrays an interpretation of a dance or art technique;
- Tells a theatrical story;
- Reproduces and reinterprets original animated artistic works.

**Examples**
- Drip Clay Animation (2 min 3 s)
- Claymation, Stop Motion Animation, Heartbeats (1 min 59 s)
- Breakdance Claymation (14 s)
- Boogie-Doodle (3 min 28 s)
- Empreintes/Imprints (6 min 3 s)

### 7. Technology

**In General:**
- Provides students with exposure to alternate types of technology;
- Provides students access to infinite amounts of information;
- Helps generate creative solutions to problems;
- Encourages critical thinking, creativity and self-expression;
- Encourages perseverance, patience and problem-solving strategies;
- Provides support for other areas of the curriculum;
- Encourages interdisciplinary and cross-curricular work;
- Encourages unique abilities and technological expertise that will enable students to compete in a global society.
### Subject Ideas for Stop-Motion Animation Integration

#### 8. MEDIA LITERACY

<table>
<thead>
<tr>
<th>Subject</th>
<th>Ideas for Stop-Motion Animation Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IN GENERAL:</strong></td>
<td></td>
</tr>
<tr>
<td>• Encourages students to explore new literacy practices and methods of self-expression using technology;</td>
<td></td>
</tr>
<tr>
<td>• Improves student engagement in project preparation using the Internet;</td>
<td></td>
</tr>
<tr>
<td>• Encourages students to become critical consumers of digital information;</td>
<td></td>
</tr>
<tr>
<td>• Improves students’ abilities to perform critical analysis;</td>
<td></td>
</tr>
<tr>
<td>• Improves students’ abilities to interpret visual images.</td>
<td></td>
</tr>
</tbody>
</table>

Some possible class combinations for interdisciplinary instruction include:

- Math, Science, Health and Technology
- Arts, Technology, Media Literacy and English
- Math, Social Studies and Technology
- English, Music, Technology and Arts

You can make the project a collaborative teacher effort by mixing and matching competencies. Use your imaginations to come up with unique artworks.

### References


Pearson Education, The Assure Model
wps.prenhall.com/wps/media/objects/1579/1617793/ASSURE/ASSURE.PDF

Learning Telecollaboratively, Lesson Plan Models
clifmims.wetpaint.com/page/Lesson+Plan+Models

Written by Lisa St. Croix, Senior Instructional Designer of Distance Education, Learning and Teaching Support (DELS), Memorial University of Newfoundland, and Nancy Beaton, Assistant to Instructional Designer of DELTS.