

Stop Motion Lego Movies with iPads



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Grade level: Middle- Middle school/ High School

Introduction

“Stop motion is a movie made from a series of individual pictures. When the pictures are viewed one after the other, our eyes are ‘tricked’ into thinking that the objects in the pictures are moving. This is the magic of stop motion.”

Excerpt From: Craig Lauridsen. “Stop Motion Handbook 3

Using animations gives students the opportunity to practice new concepts in a risk-free environment, which improves learners’ skills, and abilities and it works both ways.

While it can improve the students’ learning, it can also expand the teacher’s skill set, allowing them to change their way of teaching to be better.

Both teachers and students alike can use stop-action animation, like the Lego Movie, to demonstrate lessons with simulations. Creating Lego movies is not just promoting technology skills; it is the blending of cross-curricular objectives while it includes

problem-based learning, inquiry/discovery methods, role-play, simulation, and cooperative learning. It is perfect tools to use with students of all needs, whether they are ESOL, gifted or have learning disabilities; everyone loves Legos and can create a story using them.

Materials Needed:

iPad

Lego Movie App or iMovie

To see more, check out 'Resources'

Lego Pieces – enough to put together a story

Art material to create backgrounds/props

The Process

You will use an iPad along with the Lego app (free) to create a Lego movie. Your movie must begin with a story, then a script and finally the movie.

Task 1

Start with the story and SCRIPT

A good story deserves a good script and a good script will make for a great movie. Think about what you like in movies you watch, is it the humor, action or characters?

Remember, a story needs to be about something. That something is the premise or a problem. It's the central idea, the reason people want to watch the movie.

You should be able to tell your premise in one sentence. Any longer and it will get too complicate. Make sure it's an idea that jumps out at you!

Make it in the present tense.

Make it interesting to others, not just you.

Here are some questions that will help:

Start with a 'What if' scenario. For example, "What if you had a helper monkey?"

Would you take the monkey to school?

Would you go on adventures together?

What if your monkey could drive?

What if your monkey could do all your homework?

What if you were a fireman and the monkey helped you save someone from a burning building?

What if you were a cop and the monkey rode as your partner?

Your answers could bring about a pretty cool story!

Task 2

Write the story in three acts

The next step is to take all those ideas you've come up with and combine the best of them into a story.

The most common way to tell a story is usually done in three parts called, 'acts'. For our lesson, we will use this formula for the Lego Movie.

Act one should introduce the main character and in your case, the hero. Every story should have a hero or heroine. You will also have a problem and finally a villain.



If you take this formula, and set it to 'The Three Little Pigs', you will see how the first part of the story introduces the pigs, the problem (what type of house will be the sturdiest) and the villain, the wolf.

Act two will move the hero into the story and problem. By the end of act two things are looking pretty hopeless. (The wolf is making his way to each of the pigs homes and blowing them down with ease.)

The third and final act has a final conflict and resolution of the problem. How will it all go down? Who will be the victor? It's nice if the hero wins, but it's okay not to have a predictable ending.

Once you have completed the story, you are ready to move onto writing a script. Remember, a story isn't a script. The script includes scenes, dialog and props.

Task 3

A script takes your story, turns into details and the dialog is written of who says or does what.

Now it's time to take your story outline and determine which characters you need. What will your scenery be? What props will be included? If you are using the Lego App, you cannot include dialog, but if you are using iMovie with your Legos, you can include dialog. If you need dialog, this is the time to write it. Remember, the story, script and movie will count as three separate grades.

Don't forget to add labels to your script every time the location or time changes. When using the Lego App, you can insert special frames and customize the writing.

Tips for using Legos:

You will need lots of Lego and at least one large Lego base board – this will hold your Lego in place and keep them falling over.

Make sure you have Lego pieces that are in good condition. If you need a face, make sure it's not worn off. Nobody wants to look at a faded face.

Use caution with moving your Lego character, or its limbs. It's a tedious task and can be tricky.

Use tweezers or wire to move Lego body parts. This will keep your hands out of the picture.

Bring your Legos to the front of the stage so your camera focus will separate them from the background.

- Elevate your Lego characters, (on a block) to get a better close-up camera angle.
- You can change the background during your movie to create scene changes.
- Have your camera shot the level with the character's face.
- To make your characters look very tall, position the camera slightly lower so that it is looking up at the characters. You may need to raise characters on blocks to get the right angle.
- To make your characters look short, position the camera slightly higher so that it is looking down at them.”

If you are using the iPad 2 or iTouch, use your camera in horizontal position for the best image quality.

One of the benefits of using these cameras is there are less cables across your desk.

Make sure your device is fully charged before you start or you will need to connect a charger cable.

How many pictures do I need for animation?

What do you want your movie to look like? If you reduce the number of frames per second it won't take you as long to make the stop motion but If you reduce the frame rate too much then your movie will look jumpy.

The following frame rates will be the most useful for stop motion animation:

1-8 FPS (Frames per second)

This is fine if you only have a short time to record the stop motion or the script calls for a more 'jumpy feel'. At 1 FPS, a one-minute stop motion will have just 60 pictures.

Make the Move:

Moving your characters bit by bit is tiresome, but you will like the results. Timing is also important. You want to get the timing just right, it can help to know a little about the math involved.

If you want your Lego characters smooth and fluid, you'll want him to move across the screen in 5 seconds:

1 FPS will mean very large movements between pictures

12 FPS means more pictures and smaller movements

25 FPS means many more pictures and very small movements

NOTE: it looks more natural for characters to move in **curved paths** rather than straight lines.

Speaking of walking:



You will want your little guy to have some personality so with each step don't forget to **move the arms**. Swing them in time with the opposite leg.

Move the head. This action may not be rhythmic but might be related to what the figure is looking at as it walks by

Bend the figure forward at the hips and it will look like it is running

Lego Animation Rubric



Name: _____

Category	6 Marks Each	5 Marks Each	4 Marks Each	0-3 Marks
Animation	Animation is smooth and fluid. Character and object motions are almost always realistic	Animation is mostly smooth. Character and object motions are usually realistic	Animation is fairly choppy. Character and object motions are sometimes realistic	Animation is nearly unwatchable/extremely choppy. Character and object motions are not realistic
Storyline	There is a clear storyline that includes a discernable plot. May include complex elements and a theme.	Storyline is mostly clear , although some scenes may not relate to the plot. May include a theme.	Storyline is difficult to follow . There are many unrelated scenes in the plotline	Storyline is not present or extremely difficult to understand.
Use of Camera	Camera is consistent and scenes stay within a consistent frame & angle.	Camera may be a little bit shaky or scenes may not keep consistent angles.	Camera may be often shaky and/or scene angles are inconsistent.	Camera is extremely shaky throughout , causing the frame may bounce extremely inconsistently.
Sound and effects	Sound effects are appropriate and clear. There is very little dead sound space. All sound relates well to the scenes. May include music.	Sound effects are mostly appropriate , but may not include music, or sound effects/music may not be well chosen.	Sound effects are sparse and don't always make sense.	Sound effects are not present .

Resources:

1- [Stop Motion Recorder](#)



StopMotion Recorder is toy video camera enable you to make stunning stop motion video like claymation. And you can edit, share movie via Mail, 'Facebook', 'Twitter (Twitvid)', Twitter(yFrog) & 'Youtube' from your iPhone.

2- [Animation Creator HD](#)



Animation Creator HD allows your creativity to come to life on your iPad or [iPad Mini](#)! You are the director. With simple, yet powerful drawing tools, color options, and easy to use frame management, you're only limited by your imagination! Your animations will look smooth and life-like with the high frame rate playback of Animation Creator HD.

3- [FlipBook](#)



FlipBook has everything you need to [get started](#) animating, from an eraser to onion skinning (which lets you see a faint image of the previous and next frames) to layered drawing. Load images from your photo library, including images taken with your iPhone's camera, and draw on top of them.

4- [iMovie](#)



Make beautiful HD movies anywhere with iMovie, the fast and fun moviemaking app that puts everything you need to tell your story at your fingertips. Browse and [play](#) projects in the Marquee view. Create Hollywood-style trailers or sophisticated home movies in minutes.* And share your finished projects with the world – right from iMovie.

5- [My Stop Action](#)



Your movies are made up of a series of photos - take each photo in turn, with a semi-transparent overlay (onion skin) of the previous frame to guide you. Alternatively, use the time lapse mode to capture a changing scene over time, or choose [photos from](#) your library.

6- [Smovie](#)



The 'must have' app for making stop motion animations on iPad. Loved by families and educators around the world, Smovie is the only stop motion animation app to combine precision editing and multiple scenes with instant playback.

7- [Draw and Show](#)



Share your drawing talent in a whole new way with this art creation app. Draw, write, sketch, take notes, and create amazing videos. Share recorded videos with your friends!

8- [Animation Creator](#)



Animation Creator allows your creativity to come to life on your iPhone and iPod Touch. You are the director! With simple, yet powerful drawing tools such as brush styles, color palettes and sliders, layers, shake to undo, and easy to use frame management, there's no limits holding back your imagination! Your animations will look smooth and professional when played back at Animation Creator's life-like high film speed Frame Rate*!



LEGO APP FREE

Build your own LEGO® adventure, then capture your story!

Help your child bring their LEGO characters to life with the LEGO Movie Maker App. This fun, kid-friendly app brings the whole family together to create a custom LEGO stop-motion movie.

Simple tools and guides make it easy to shoot, edit, and even score your movie with music. Add one of the customizable title cards then share it online and, who knows, you may have the next summer blockbuster in your hands...literally!

Features:

-Add & delete frames to your movie

- Choose from 7 different soundtracks, or add music from your library
- Add a color filter to the camera
- Customize different title cards
- Save your movie to your camera roll
- Add text to your movie with custom dialog cards
- Add LEGO sound effects to any frame
- Record your own sound effects
- Edit the duration of each frame

LEGO Movie Maker works on iPhone, iPod Touch and iPad devices with camera and supports operating systems of iOS5 and up. Although devices with only a front facing camera are supported, we recommend a rear facing camera for an optimal experience

Standards

Grades 9-12

Basic Operations and Concepts

- C/T 9-12.1 Demonstrate an operational knowledge of various technologies.
- A. Use various types of technology devices to perform learning tasks.
 - Demonstrate the ability to perform a wide variety of complex tasks using technology, including creating and using models and simulations, developing multipage documents and multimedia presentations, capturing and manipulating video, and constructing spreadsheets that use mathematical or logical functions to manipulate and present data.
 - B. Communicate about technology with appropriate terminology.
 - Use an expansive technology vocabulary in daily practice.
- C/T 9-12.2 Identify and use available technologies to help complete specific tasks.
- A. Identify the specific uses for various types of technology and digital resources.
 - Apply knowledge of different types of technology and digital resources to routine and complex tasks.
 - B. Use content-specific tools, software, and simulations to approach projects.
 - Use specialized tools to assist with learning in various content areas.
 - Use models and simulations to learn complex concepts, solve problems, and make decisions.

 - Participate in projects that involve others digitally, working together toward a common goal.
 - Pursue individual projects using online resources.
 - Demonstrate the ability to identify diverse perspectives on issues.

Thinking Skills, Problem Solving, and Decision Making

- C/T 9-12.12 Practice reasoning skills when gathering and evaluating data.
- A. Employ technology in developing strategies for solving problems.
 - Regularly use technology tools to assist in authentic problem-solving activities.
 - Investigate and apply expert systems and intelligent agents in real-world situations.

- B. Select resources that extend one's own capability to solve problems and make informed decisions.
 - Choose resources that extend one's own capabilities when solving problems.
- C/T 9-12.13 Demonstrate organization and persistence when completing personal and group assignments, activities, and projects.
- A. Use digital resources to assist with project planning.
 - Use various productivity tools that help with planning and time management.
 - B. Use digital resources to assist with project management.
 - Use productivity tools to assist in tracking and meeting goals.
- C/T 9-12.14 Use models and simulations to understand complex systems and processes.
- A. Use simulations to understand complex concepts.
 - Enhance understanding of concepts and skills by using simulations.
 - B. Use various digital resources to produce graphical representations of data.
 - Complete assignments involving data by using data graphing or imaging tools.

Technology Communication Tools

- C/T 9-12.15 Communicate effectively with others (e.g., peers, teachers, experts) in collaborative learning situations.
- A. Use technology tools for individual and collaborative writing, communication, and publishing activities.
 - Use various technology resources to develop, revise, and assess written and media-based reports and projects, integrating technologies as appropriate.
 - Independently collaborate with others using digital communication tools.
 - Use digital communication tools to communicate with specific audiences.
 - B. Participate in communications among different cultures.
 - Contribute during a distance-based communication project that includes individuals from different cultures by leveraging the differences of those cultures to develop solutions to common issues.

- C. Participate in online courses, social and learning networks, and virtual worlds.
 - Manage goals for learning in an online course.
 - Participate in activities that involve social and learning networks and virtual worlds.

C/T 9-12.16 Apply knowledge and skills to generate innovative ideas, products, processes, and solutions.

- A. Use various creative software, programming environments, or digital tools to convey existing ideas in new and effective ways.
 - Use technology to develop innovative and effective solutions for assignments.
- B. Add meaning to individual and group ideas and products through creative work.
 - Create a drawing, painting, or other visual image.
 - Create original music.
 - Produce a video.
- C. Participate with peers and experts to assess projects.
 - Use peer networks to provide and receive assessments.
 - Use communication media to locate experts who can assess projects.