Activity Pack 2: Create

Activity for Grades 9-12

Leonardo DaVinci was one of the greatest creative minds in history. He used his ability to draw to help him think, sketching cartoons in his notebooks that illustrated things he observed or the beginnings of design ideas. To ignite his imagination, he would draw a simple shape and then imagine what he could make out of it. These drawings included the first conceptualizations of the modern helicopter, a tank, and solar power inventions.

Once students have come up with their ideas, the next stage in the creative process is creation. Creation can take many forms, including a drawing, a model, an animation, a sculpture, or a prototype. In this activity, students will draw, sketch, paint, or animate their ideas for making the world a better place. By the end of the activity, they will have a prototype of their design for the Doodle 4 Google competition. It’s important for students to understand that there is no one technique or one set of materials they must use to create their illustrations. It’s also helpful for them to remember that they can go back to the earlier Imagine activity to draw inspiration and change or improve their ideas.

This year’s Doodle 4 Google competition theme is: If I could invent one thing to make the world a better place. We can think of no greater purpose for students to show their creativity than to make the world better for others. We can’t wait to see what they create!

It’s Your Move

In this activity, students learn about animation and apply the technique, first on storyboards and then digitally. Note: Although students must submit static drawings to the competition, the winner will have a chance to work with a Google doodler to animate his or her design. Thus, this activity is designed to promote creativity and build motivation.

Strategy: In this activity, students will be introduced to animation, the process of creating simulated, continuous motion and shape by displaying a series of pictures or frames. Cartoons are an example of animation, as is the movement seen by characters in movies like “Toy Story” and “Frozen.” Animation can be drawn by hand or it can be computer-generated. In this activity, students will create storyboards, graphic organizers in the form of illustrations that help us visualize an animation, movie or interactive motion sequence. If technology is available, they will then use digital tools to see their animations come to life.

You Will Need:
- White paper
- Pencils, markers, colored pencils
- Rulers
• Different types of balls such as footballs, beach balls, baseballs, tennis balls, volleyballs, and super balls
• Computers or tablets (optional)
• Access to the Internet (optional)

1. Invite partners or groups of three to select a ball from the collection you brought to class (see materials list).

2. Direct them to create a series of movements with the ball. They can throw it in the air, bounce it, toss it to one another, etc.

3. Ask students to select one of those movements, and to write a list of steps that explains how that movement happens. For example, if they were bouncing the ball, the steps might look like the sequence below. Note: Students may need to create the movement a few times to create their sequence.
   • Ball is held in two hands.
   • Both hands push down and ball is released.
   • Ball is travelling downward.
   • Ball hits the ground.
   • Ball is travelling upward at an angle.
   • Ball is almost at the two hands waiting to catch it.
   • Ball is caught and squeezed by two hands.

4. Invite a few volunteers to share their listed steps.

5. Ask a student volunteer to define “animation” (when an object or character moves in an illustration). Explain that animation is typically created through a series of freeze frames. Each frame shows a very slight sequence of movement. When the frames are put together, they give the appearance of movement. Animation can be done using art drawn illustrations or with a variety of different digital tools.

6. Ask students to imagine that they wanted to animate the movement of their ball. How might they do that?

7. Introduce the term, “storyboard” to students. Explain that a storyboard is a visual way to organize what happens in a film, animation, or interactive sequence, among other things. Animators use storyboards to plan out and show the movement of characters and objects. Modern storyboarding was developed at the Walt Disney Studios in the 1930’s. It was first used for an entire film with the production of Three Little Pigs. The technique is credited to Disney animator Webb Smith; he first drew pictures on small pieces of paper and pinned them to a board to tell a story in a sequence. One of the first live action movies to be entirely storyboarded before production was Gone with the Wind.
8. Explain that today they are going to use storyboards to help them illustrate their ball’s movement and then to help with their Google doodle.

9. Invite students to draw a series of squares or rectangles on a sheet of paper. Each square or rectangle should have a few lines or a box underneath where words can be written. This will be the template for their storyboard. Note: They can also find printable storyboard templates on Google Images.

10. Explain that storyboards can be as rough or as detailed as the artist wants. Sometimes the artist makes certain key frames (the first, middle and last for instance) the most detailed with the other frames focusing on just the primary objects and their movements.

11. Invite students to select the same or a different movement for their balls. They can create their storyboards individually or in their groups. If they are using the same movements, they can use their lists to help them plan their storyboard sequence. Invite them to illustrate in the first box how their ball looks as the movement begins (with a person or people in the illustration if they choose) and to use the lower box or lines for any written description that they’d like to include. Then, invite them to illustrate in the last box how their ball looks as the movement ends. It may look the same (if the ball is bounced) or it may be completely different (if the ball is passed from one person to another).

12. Ask them to identify the box that would represent the middle of the animation. For example, if they drew nine boxes, the fifth box would be the middle. In that middle box, invite students to illustrate how the ball would look at the very middle of the movement. For example, with a bouncing ball, the middle movement would be when the ball hits the ground.

13. Explain that these three frames are their key frames. All of the other frames should show the object/movement as it progresses between these frames.

14. Direct students to finish their storyboards. Encourage them to use arrows or words in the lines underneath to explain what is happening in the illustration.

15. Invite students to present their finished storyboards to the class. After each presentation, ask students to evaluate whether the storyboard accurately showed the movements of the ball and people involved.

16. Explain to students that animation can also apply to a doodle. Challenge them to identify the animation in the Google doodles below.

   - New Year’s Day 2014: http://www.google.com/doodles/new-years-day-2014

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17. Ask students how they think these animated doodles are created. Invite them to learn how by visiting http://zoompf.com/blog/2012/04/how-do-google-animated-doodles-work.

18. Refer students back to the question they answered in the “Imagination in Reverse” activity from the Imagine activity pack: If I could invent one thing to make the world a better place, what would it be? Remind students that the competition asks them to use the word “Google” as inspiration to doodle their answer. Sample Google doodles can be viewed at http://www.google.com/doodles/finder/2014/All%20doodles. Explain that the winner of this year’s competition will get to go to Google and work with the real doodlers to digitally animate his or her doodle!

19. Invite students to create a storyboard to illustrate how they would animate their doodle. If time and technology allow, encourage students to use “GoAnimate4Schools” or “Kerpoof” (see below) to create a prototype animation. For students who are more advanced or show more interest in learning animation, you may want to suggest they use an animation tablet, or an animation pen for their existing tablet.

20. Finally, give students time to create a draft of the design they will submit for the Doodle for Google competition. (In the Share and Collaborate activity pack, they will share their doodle and storyboard with peers.) Their prototype doodle must show how they would make the world better, include the word “Google,” and follow the rules of the competition.

Take It Digital!
If students want to explore computer-generated animation, encourage them to visit:

- **Animasher**: This simple drag-and-drop, Web-based animator offers a library of images, voice and video clips and sound effects for creating quick projects. Use existing clip art and sound, or upload your own elements to create projects.

- **Animation Desk**: App for creating short, animated videos. Allows you to create drawings using just your finger on your table. In the free version of the app you can create up to 50 scenes in each of your projects. In each scene you can include as little or as much as you want to draw on the canvas. There are a few different brush and pencil effects that you can use in your drawings. The opacity of the colors you choose can be altered too. When you have completed drawing all of your scenes hit the play button to watch your animation unfold. If you’re happy with your animation you can export it to YouTube.

- **ABCYA! Animate**: Abcyacom is a teacher-created website which provides fun and educational games and apps for kids to use under the guidance of their parents and teachers. ABCYA has an animation tool that allows users to create a series of drawings and animate them into a flip book. The new version features a colorful and intuitive interface, 100 frames, grouping,
• **Kerpoof**: Owned and operated by Disney, this Web-based studio designed for young people is all about making art and animated movies. Kerpoof offers many different movie-making programs and activities organized by grade level and cross-referenced with state and national educational standards. Winner of a 2010 Parents’ Choice Gold Award, the site is mostly free, with premium membership options.