

Teacher Guide: How Does Technology Change Movie Industry/Filmmaking?

This activity is designed for 3-5 grade computer science classes to meet computer science standards and cover AI4K12 guidelines but it could be used in language arts or social studies or art classes or when teaching digital citizenship lessons.

It is important that students understand that AI and machines (computers, tablets, phones, robots, smart speakers, etc.) aren't magic and the machines don't do things all on their own from the moment they are built and turned on. Humans are still involved even when they are not explicitly programming everything.

Structure of Learning Activity	Materials Needed
Lesson 1 (about 90 minutes or two lessons) 1. Identify the impact that previous technology has had on the movie industry/filmmaking (10 minutes) 2. Create a movie story with a AI text generator (15 minutes) 3. Discuss the impacts of AI text generator. (20 minutes) 4. Create a picture that can be used in movie using a drawing tool with AI. (15 minutes) 5. Discuss the impacts of AI drawing tools. (20 minutes) 6. Discuss the rules to protect humans from AI tools. (10-15 minutes) Lesson 2 (about one hour) 1. Identify the impact that previous technology has had on the movie industry/filmmaking (10 minutes) 2. Create a movie story with a AI text generator (15 minutes) 3. Discuss the impacts of AI text generator. (20 minutes) 4. Discuss the rules to protect humans from AI tools. (10-15 minutes) Lesson 3 (about one hour) 1. Identify the impact that previous technology has had on the movie industry/filmmaking (10 minutes) 2. Create a picture that can be used in	• <u>Teacher Guide</u> • <u>Slides</u> • For Timeline Activity: ◦ <u>Visual storytelling images AND/OR Visual storytelling milestone worksheet (Student)</u> and <u>worksheet for teacher</u> ◦ Scissors and Glue (depending on how the timeline activity is completed) • For Movie Story Making: ◦ <u>Movie Story Prompt Worksheet</u> • Teacher device for accessing: ◦ <u>Slides</u> ◦ <u>ChatGPT, Bard or Bing Chat</u> ◦ <u>AutoDraw, Padlet I Can't Draw, Scribble Diffusion, Canva Magic Media, Adobe Firefly</u> • Student devices for accessing ◦ <u>ChatGPT, Bard or Bing Chat</u> ◦ <u>AutoDraw, Padlet I Can't Draw, Scribble Diffusion, Canva Magic Media, Adobe Firefly</u>

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movie using a drawing tool with AI. (15 minutes) 3. Discuss the impacts of AI drawing tools. (20 minutes) 4. Discuss the rules to protect humans from AI tools. (10-15 minutes) 5.	
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Before you use this activity

- Check that you, the teacher, have access to an AI tool you can prompt to write a short story. Options include:
 - ChatGPT (account required)
<https://chat.openai.com/>
 - Bing Chat (Use Edge Browser / ChatGPT built-in)
 - Google Bard (account required)
<https://bard.google.com/chat>
 - Canva Magic Write (account required)
<https://www.canva.com/magic-write/>
- Check that the AI tool that you want students to use is available for your students:
 - Autodraw (no account required / students can work in collaboration with AI / NOT generative AI and no language is required)
<https://www.autodraw.com/>
 - Scribble Diffusion (no account required / students draw a representation of what they want the AI to draw AND tell the AI what to draw with words)
<https://scribblediffusion.com/>
 - Padlet I Can't Draw (no account required for students)
The teacher will need to set up a padlet for students to use. It can be a good idea to set the permissions so you have to approve all posts; this will let you see everything students want to post but the students can only see their own post unless you approve the posts.
<https://padlet.help/l/en/article/tbyuge7lmd-how-do-i-draw-in-a-padlet#:~:text=Use%20the%20I%20can't,to%20draw%20and%20submit%20it>
 - Canva Magic Media (accounts required / schools may already have Canva EDU accounts)
<https://www.canva.com/help/using-magic-media/>
 - Adobe Firefly (accounts required / schools may already be using Adobe products)
<https://www.adobe.com/sensei/generative-ai/firefly.html>
- Watch the following videos from Code.org for brief explanations of how

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generative AI works, both with language and images:

- How Large Language Models (like ChatGPT) work
<https://youtu.be/X-AWdfSFCHQ?si=y-H9xyeE9ZbcNblh>
- How AI art works (this does not apply to Autodraw)
<https://youtu.be/X994dDnmRmY?si=5EwF-EGfPUoedC4I>

Standards and Guidelines

The following standards and guidelines will be addressed in the activity.

California Computer Science Standards:

- K-2.IC.18 Compare how people lived and worked before and after the adoption of new computing technologies.
- 3-5.IC.20 Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.
- 3-5.IC.23 Describe reasons creators might limit the use of their work.

CSTA Computer Science Standards:

- K-2 1A-IC-16 Compare how people live and work before and after the implementation or adoption of new computing technology.
- 3-5 1B-IC-18 Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.
- 3-5 1B-IC-21 Use public domain or creative commons media, and refrain from copying or using material created by others without permission.

AI4K12 Guidelines:

While the activity addresses the guideline areas below, it may not explicitly meet the Learning Objectives and Enduring Understandings.

- PERCEPTION - Processing (Abstraction Pipeline: Vision) 1-B-iv
NOTE: These could be covered during this activity but are not explicitly included.
 - K-2 LO: Demonstrate figure/ground segmentation by identifying the foreground figures and the background in an image. / EU: Visual scenes have a structure that includes a background and a foreground, with foreground objects partially occluding (blocking) the background.
 - 3-5 LO: Illustrate how the outlines of partially occluded (blocked) objects in an image differ from the real shapes of the objects. / EU: Understanding complex scenes requires taking into account the effects of occlusion when attempting to recognize objects.
- LEARNING - Nature of Learning (Humans vs. machines) 3-A-i:
 - K-2 LO: Describe and provide examples of how people learn and how computers learn. / EU: Computers learn differently than people.
 - 3-5 LO: Differentiate between how people learn and how computers learn. / EU: Both people and computers can learn by finding patterns in data, or

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by trial and error. But people are flexible learners who can adapt to unfamiliar situations and learn in other ways, such as by observing others, by asking questions, or by making connections to prior learning.

- NATURAL INTERACTION - Natural Language (Applications) 4-A-iv *Generative AI would fall into this area but it is not part of the K-2 or 3-5 LO and EU.*
- SOCIETAL IMPACT - AI & the Economy (Impacts of AI on Sectors of Society) 5-C-i
 - K-2 LO: Identify current uses of AI and how they have impacted society. / EU: Society has undergone changes because of AI and this will continue in the future.
 - 3-5 LO: Identify changes in how sectors of society operate due to the introduction of AI. / EU: Every sector of society is changing (or will change) as a result of the introduction of AI.
- SOCIETAL IMPACT - AI & The Economy (Effects on Employment) 5-C-ii
 - K-2 LO: Describe some jobs that no longer exist due to advances in technology. / EU: New technology changes the types of jobs that are available for people.
 - 3-5 LO: Describe how a job will change due to the introduction of AI or robotic technologies. / EU: As AI and robotic technologies are adopted in the workplace, the ways people perform their jobs will change

Education strives to help our students understand the world starting in our earliest grades. Our current world includes artificial intelligence and it's never too early to help our students understand how things work, including AI. This session will provide ways to demystify AI for students. Come and take a peek under the hood!