Challenging the Limits of AI

Lesson Overview: In this lesson, students will be introduced to prompt writing as a tool to generate using AI. Our goal is to help students understand that AI is only as good, creative or accurate as the person using it as a tool. It should also help students begin to recognize the importance of giving credit to a generation tool instead of taking ownership of AI-generated work.

Time Frame: 1 – 45minute sessions

Suggested Grade Levels: 6th – 8th

Standards:

Standard	Statement
C.S. 3-5.AP.14	Observe intellectual property rights and give appropriate attribution when creating or remixing programs
C.S. 6-8.ET.E	Create new or original work by applying emerging technologies.
VA:Cr2.1.4	Explore and invent art-making techniques and approaches.
VA:Re7.1.8	Explain how a person's aesthetic choices are influenced by culture and environment and impact the visual image that one conveys to others.
CCSSI_ELA: 6 Writing – 3.d	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events.
MS-ETS1-2.	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
MS-ETS1-1	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
C.S. 3-5.AP.14	Observe intellectual property rights and give appropriate attribution when creating or remixing programs
C.S. 6-8.ET.E	Create new or original work by applying emerging technologies.

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Vocabulary:

- **Prompt** – the user's input that gives AI the guide to generate a response. Typically a question, command, or statement.
    - **Indicación**: la entrada del usuario que guía a la IA para generar una respuesta. Normalmente, una pregunta, una orden o una afirmación.
- **Precise Language** – the use of clear, specific, and unambiguous works to communicate with the AI computing system.
    - **Lenguaje preciso**: el uso de palabras claras, específicas e inequívocas para comunicarse con el sistema informático de IA.
- **Response** – the reply that is generated by an AI computer system in response to the user's (human's) prompt.
    - **Respuesta**: la respuesta que genera un sistema informático de IA en respuesta a la solicitud del usuario (humano).
- **Artificial Intelligence** – the use of computer systems to produce information that normally requires human intelligence. Using computer systems to complete tasks that normally would require human intelligence.
    - **Inteligencia Artificial**: el uso de sistemas informáticos para producir información que normalmente requiere inteligencia humana. Utilizar sistemas informáticos para realizar tareas que normalmente requerirían inteligencia humana.
- **Large Language Models** – a type of artificial intelligence that was trained on enormous amounts of text data. It uses the text to understand, summarize, and communicate with humans.

Materials:

- Computer or tablet with access to Perchance AI image generator or other AI image generation programs like ChatGPT, Adobe Firefly, etc.
- Paper
- Pencils

Procedures/Steps:

1. Students will be creating an Exquisite Corpse. This is a creature that is drawn by a group of three people who don't look at the other parts of the image as they are drawing their image.
2. Hand each student a sheet of printer paper and show them how to carefully fold the paper into thirds
3. On the side of the paper where the folds are facing the student, they should write, in the top left corner of each of the three boxes they created Head, followed by Body, and Legs.
4. Tell your students they will be creating the most fantastic creature they can imagine! The stranger and more fun, the better! However, they can only create ONE of the sections of the creature before they must hand their work off to another person to continue. Here's the catch – the next person will NOT see what has been drawn previously as they are creating. Another kicker – they will only have 1 minute to draw their masterpiece in the section allotted.
5. Remind them NOT to peek at anyone else's image as they are drawing. Our goal is fantastic creatures.
6. Instruct students to start with their paper folded so they only see the HEAD section of their paper. Let them know that they can draw the head in the space, but their image's neck MUST touch the fold.
    a. Allott them 60s to draw the head of the beast. Encourage them to be creative, remind them you never said it had to be human! And also, you never said it had to be an animal. They can create anything from the head of a fish to a robot or a bear. But they can ONLY draw the head.
    b. If they finish before the timer is up, encourage them to add additional details to make the creatures more exciting.
7. Have your students fold their paper so the head portion is appropriately hidden and the body portion is facing upwards. Have them pass their paper one to the left. Remind them NOT to peek at the previous image!
8. In the body section, give the students 60 seconds to draw and let them know:
    a. They need their body to touch both folds of the paper so that the image is continuous.
    b. They can draw any type of body, but it needs to be school appropriate.
    c. If they finish before the timer is up, encourage them to add additional details to make the creatures more exciting.
9. Now, still without peeking, they need to hide the body portion and have only the Legs portion facing upwards.
10. In the legs section, give the students 60 seconds to draw and let them know:
    a. They need their legs to touch the fold of the paper so that the image is continuous.
    b. They can draw any type of body, but it needs to be school appropriate.
    c. If they finish before the timer is up, encourage them to add additional details to make the creatures more exciting.
11. Once they have created their exquisite corpses they should hand it back to the original artist. They should open their corpses and display them on their desks. Then encourage

everyone to do a gallery walk so they can see all of the ridiculous creatures they have created.
12. When the giggles are all out, have students return to their seats and go over the concept of precise language, prompts, and responses.
13. Students should spend some time writing an accurate prompt to enter into AI that describes their creature.
14. Once they have a description, they can use AI image generation to create their creatures online and clean up.
15. Encourage them to refine their language until they have received a clear image similar to the one on their paper.
16. Once everyone has a good image, print the images out.
17. Students should work with a partner to generate a clear explanation of how AI learns, why precise language is important, and how we can use AI to generate images. They also need a short explanation for why they would need to give AI credit for the image, even though they first drew it and described it.
18. They should take their original drawn images, their AI generated images, and their writing responses, and create a poster that can be displayed to help teach others how AI works.

Supplemental Extensions:

- Students can create advocation posters for using precise language when communicating (instead of all of the slang that has no meaning except in meme culture). It can be framed from the perspective of the AI overlords getting confused by all the human nonsense talk.
- Students can create their own language that computers wouldn't understand in an effort to hide their meanings from computers. They can try entering it into an AI chat to see if the computer will ever make sense of what they are saying. Relate that to how teachers are always working on decoding things students submit.
- Students can create a series of prompts, using precise language, to see if the AI image generators will create an exact image of themselves.

Instrucciones en español

1. Los estudiantes crearán un cadáver exquisito. Se trata de una criatura dibujada por un grupo de tres personas, donde cada una dibuja una parte sin ver las demás.
2. Entreguen a cada estudiante una hoja de papel y muéstrenles cómo doblarla cuidadosamente en tres partes.
3. En el lado del papel donde están los pliegues, en la esquina superior izquierda de cada una de las tres secciones, deben escribir: Cabeza, Cuerpo y Piernas.
4. ¡Diles a tus alumnos que crearán la criatura más fantástica que puedan imaginar! ¡Cuanto más extraña y divertida, mejor! Sin embargo, solo podrán crear UNA de las partes de la criatura antes de pasar su trabajo a otra persona para que continúe. Aquí está el truco: la siguiente persona NO verá lo que se ha

dibujado anteriormente mientras crea su parte. Otro detalle importante: solo tendrán 1 minuto para dibujar su obra maestra en la sección asignada.

5. Recuérdales que NO deben mirar el dibujo de nadie más mientras dibujan. Nuestro objetivo son criaturas fantásticas.
6. Indícales que comiencen con el papel doblado de manera que solo vean la sección de la CABEZA. Diles que pueden dibujar la cabeza en ese espacio, pero el cuello de su dibujo DEBE tocar el pliegue.
    a. Dales 60 segundos para dibujar la cabeza de la bestia. Anímalos a ser creativos; recuérdales que nunca dijiste que tuviera que ser humana. Y tampoco dijiste que tuviera que ser un animal. Pueden crear cualquier cosa, desde la cabeza de un pez hasta la de un robot o un oso. Pero SOLO pueden dibujar la cabeza.
    b. Si terminan antes de que se acabe el tiempo, anímalos a añadir detalles adicionales para que las criaturas sean aún más interesantes.
7. Pida a sus alumnos que doblen el papel de manera que la parte de la cabeza quede oculta y la parte del cuerpo quede hacia arriba. Pídales que pasen su papel al compañero de la izquierda. Recuérdeles que NO deben mirar el dibujo anterior.
8. En la sección del cuerpo, dé a los alumnos 60 segundos para dibujar y explíqueles lo siguiente:
    a. El cuerpo debe tocar ambos pliegues del papel para que la imagen sea continua.
    b. Pueden dibujar cualquier tipo de cuerpo, siempre y cuando sea apropiado para la escuela.
    c. Si terminan antes de que se acabe el tiempo, anímelos a añadir detalles adicionales para que las criaturas sean más interesantes.
9. Ahora, sin mirar el dibujo anterior, deben ocultar la parte del cuerpo y dejar solo la parte de las piernas hacia arriba.
10. En la sección de las piernas, den a los estudiantes 60 segundos para dibujar y explíquenles lo siguiente:
    a. Las piernas deben tocar el pliegue del papel para que la imagen sea continua.
    b. Pueden dibujar cualquier tipo de cuerpo, siempre y cuando sea apropiado para la escuela.
    c. Si terminan antes de que se acabe el tiempo, anímenlos a añadir detalles adicionales para que las criaturas sean más interesantes.
11. Una vez que hayan creado sus cadáveres exquisitos, deben devolvérselos al artista original. Luego, deben abrir sus dibujos y exhibirlos en sus pupitres. Animen a todos a hacer un recorrido por la galería para que puedan ver todas las criaturas divertidas que han creado.

12. Una vez que hayan terminado de reírse, pida a los estudiantes que regresen a sus asientos y repase el concepto de lenguaje preciso, indicaciones y respuestas.
13. Los estudiantes deben dedicar un tiempo a escribir una indicación precisa para introducir en la IA que describa su criatura.
14. Una vez que tengan la descripción, pueden usar la generación de imágenes por IA para crear sus criaturas en línea y perfeccionarlas.
15. Anímelos a refinar su lenguaje hasta obtener una imagen clara similar a la que dibujaron en papel.
16. Cuando todos tengan una buena imagen, imprímalas.
17. Los estudiantes deben trabajar en parejas para generar una explicación clara de cómo aprende la IA, por qué es importante el lenguaje preciso y cómo podemos usar la IA para generar imágenes. También necesitan una breve explicación de por qué deben dar crédito a la IA por la imagen, aunque la hayan dibujado y descrito ellos mismos.
18. Deben tomar sus dibujos originales, las imágenes generadas por IA y sus respuestas escritas, y crear un póster que se pueda exhibir para ayudar a otros a comprender cómo funciona la IA.

Extensiones complementarias:

- Los estudiantes pueden crear carteles para promover el uso de un lenguaje preciso al comunicarse (en lugar de la jerga que solo tiene sentido en la cultura de los memes). Esto se puede plantear desde la perspectiva de que las inteligencias artificiales se confunden con el lenguaje incoherente de los humanos.
- Los estudiantes pueden crear su propio lenguaje que las computadoras no entiendan, con el fin de ocultar el significado a las máquinas. Pueden intentar introducirlo en un chat de IA para ver si la computadora logra comprender lo que dicen. Esto se puede relacionar con el trabajo que realizan los profesores al intentar descifrar lo que los estudiantes escriben.
- Los estudiantes pueden crear una serie de indicaciones, utilizando un lenguaje preciso, para ver si los generadores de imágenes de IA crean una imagen exacta de ellos mismos.

Outcomes/Assessments/Rubrics:

- Educators, please complete a rubric for your students based on the following topics. Ensure to provide your students with adequate feedback on ways they can improve their practice.
- For scoring, please reflect on how students performed on different tasks, provide evidence for success, and circle the appropriate score:
  - 1 = **Emerging** - This design standard is not yet represented or reflected in student work.
  - 2 = **Building** - This design standard is somewhat represented or reflected in your student work, but many improvements still need to be made.
  - 3 = **Promising** - This design standard is fairly well represented or reflected in student work, but a few improvements may need to be made.
  - 4 = **Strong** - This design standard is fully represented or reflected in student work with clear evidence of success, even if minor adjustments still need to be made.

Name:	Evidence	Areas for improvement	Score:
Sample: Understanding Vocabulary	- Student successfully identified definitions from memory with 100% success - Student was able to utilize the words appropriately in conversation and in written work, but there were several errors.	- Student can improve on appropriate usage of vocabulary in writing and conversation.	1 2 **3** 4
To what degree did you give a clear explanation of how AI learns and processes data			1 2 3 4
To what degree was your AI generated image similar to the hand drawn one?			1 2 3 4
To what degree were you able to be creative and innovative with your display?			1 2 3 4
To what degree was your writing reflective and comprehensive?			1 2 3 4
How well did you work collaboratively to follow instructions and work with others?			1 2 3 4