Name		Date	

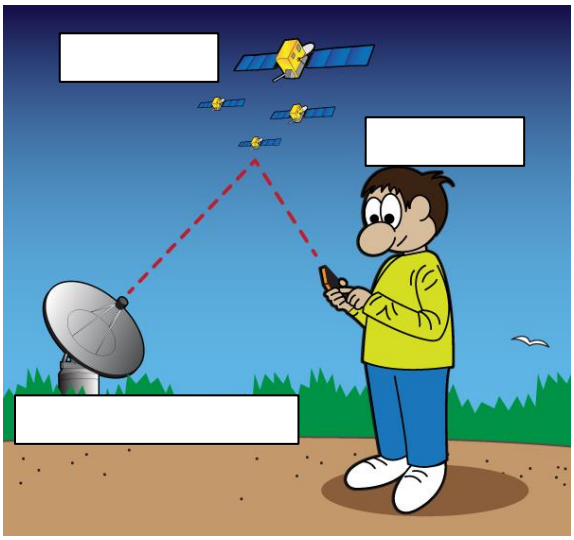
Directions: Students read the prompts and answer in complete sentences in the box to the right.

Part 1: Where is AI?

Section C: Mini-Activity: "Where is AI?"	
What are some examples of AI or Machine Learning that you have seen in school?	
What are some examples of AI or Machine Learning that you have seen at home?	

Day 2: How do Satellites "Wave?"

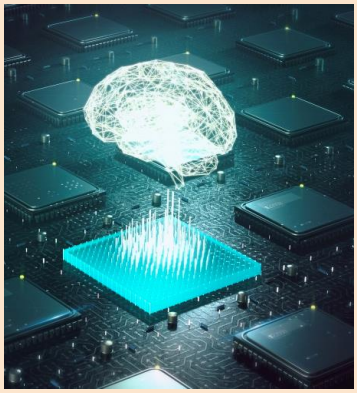
Section F: How do Satellites Wave?
Match the word in the word bank to its correct location on the diagram.

Satellite **Ground Station** **Receiver**	
What are two ways YOU have used a satellite in your life?	

Day 3: I Wear Many Hats

Section I: Match that Engineer!	
Match the title of the type of engineer listed to the description on the right. Draw a line in between.	
Guidance, Navigation and Control Engineer	Responsible for trajectories, flight paths, and orbital mechanics. Makes sure all parts follow the correct path and physics.
Flight Dynamics Officer/ Engineer	Researches and designs methods of communication in space with Earth
Systems Engineer	Designs, manufactures, and tests systems for aircraft spacecraft.
Communication Engineer/ Specialist	Calculates how much memory, data, and what type of data/computer processing will be needed for scenarios.
Computational Analyst	Works with all teams, manufacturers, and designs to ensure product works as advertised.

Day 4 & 5: Solve the Code. Save the World!

Section J: Vocabulary Development			
Word	**Definition**	**Image**	**Description or Analogy in Your Own Words**
Artificial Intelligence, (AI)	The science of making machines (like computers or robots) think like humans		
Machine Learning	A subset of A.I that involves teaching a machine how to think.		
Satellite	A man-made or natural object that moves around a larger object.		
Orbit	The curved path of an object around a large mass, such as a star or planet.		

Ground Station	A technological station placed on Earth to collect and stream satellite data.		
Receiver	The destination that receives the communication or data from the satellite.		

Section K: Play

Scenario:

The world is in danger! A satellite has malfunctioned, causing it to send out four mysterious error codes, disrupting communication with other satellites and jeopardizing important missions.

As natural problem solvers, your team of brilliant scientists and engineers knows that you will need to step up and embark on a mission to resolve the error codes and restore communication.

You and your team quickly realize that to solve such a big problem, you will need the help of an Artificial Intelligence in the laboratory to check your progress to resolve the problem.

Your team will encounter four error codes; a jumble of numbers and symbols, a series of binary numbers, complex mathematical equations, and finally an encrypted top secret message.

When each code is solved, team members will check the answers with the located AI in the room. The AI can let your team know if your answer is correct or incorrect. Please note the AI can not explain to your team why your answer is right or wrong. . When each code is solved, the team will be one step closer to the satellite's systems coming back online, and communication with other satellites will be restored.

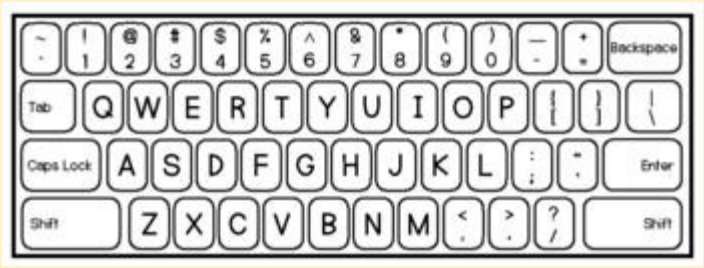
Play the Game!

Solve the following four codes. When your team has resolved an error in a code, go to the located AI in the room to check your work. Remember, the AI can not tell you what you have done wrong, only if your team is correct or incorrect!

When your team has solved all four codes, you have restored communication in the satellite and your team has saved the world!

Code 1:

12#34%56&78*90

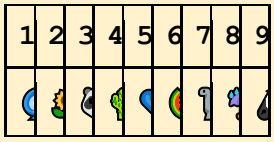


Error Message: Oops! Looks like there's a mistake in the code

Error for Code 1:	
Correct Code:	

Code 2:

Error Message: That's a mistake! Emojis have replaced digits, solve the formulas.



Error in Code 2:	
Correct Code:	

Code 3:

Message: OCEJKPG NGCTKPI

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
C	D	E	F	G	H	I	J	K	L	M	N	0	P	Q	R	S	T	U	V	W	X	Y	Z	A	B

Error Message: Oops, message has been intercepted! Send a decrypted message to grant access.

Caesar Cipher: A type of cipher that shifts letters in a message to make it unreadable if intercepted. To decrypt, reverses the shift.

2 letter shift : K=I

Decrypted Message:	