Think Like a Coder - Part 5

Warm-up!

What Do These Images Convey?

Write your thoughts here:

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Reading
Warm-Up - Technological issues

Read the text and answer the questions

      The adventurers arrived at the edge of the woods, their mission clear: reach the tower. They were greeted by Octavia, the leader of a hidden **sanctuary** within the trees. The residents of this place had once been passionate artists, their works **exhibited** throughout the colony. However, their focus had shifted, and now they only painted portraits of themselves. The tower was guarded by a powerful **garrison** of robots. Octavia had tried for years to reach it, but the defenses continued to **thwart** her efforts. She proposed a plan: **vandalism**. Hedge, one of the adventurers, was tasked with **defacing** the residents' portraits. By **simulating** Hedge's painting path, they planned to cause chaos. Hedge's painting **processor** was very precise.

Questions:
1.   What was the adventurers mission?
2.   Who was Octavia?
3.   What was Hedge's task?

       "Hedge began his work, carefully painting an X on each portrait. The paintings, all squares, were arranged in **concentric** patterns around the town square. Soon, cries of anger echoed through the forest as the residents discovered the damage. The robots, now **agitated**, left their posts to calm the crowd. This created the perfect opportunity for Ethic, Hedge, and Octavia to slip past the defenses. They approached the tower, but a deep ravine stood in their way. They would have to find another way across. The success of their mission depended on their ability to navigate the dangerous terrain and reach the tower before the guards returned. The stakes were high, and time was running out. They pressed forward, determined to succeed."

Questions:
1.   The ravine is a big obstacle. What's a time you had to overcome a challenge, and how did you do it?
2.   Imagine you had a robot helper like the ones guarding the tower. What fun or helpful tasks would you program it to do?

Video
Think Like a Programmer
https://www.youtube.com/watch?v=7mOev8v3D1U

Watch from 00:00 - 00:47

Pick the correct form
"Dawn and **the/a** train are both breaking when Ethnic and Hedge…"

"She established this treehouse **sanctuary/santuary/santcuary**…"

Watch from 00:47 - 01:05

Checking Comprehension

What does it mean if you "forget the point" of something?
_____
_____

The place was designed as a "haven" - what does that mean?

_____

_____

Watch from 01:05 - 02:53

The Challenge
After watching, take a few moments to consider the problem and discuss as a group how you would solve the conundrum.

Write your thoughts here:

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Watch from 02:53 - 06:25

The solution:
The "X" Painting Puzzle

"Imagine you have a robot named Hedge, and he needs to paint an 'X' on square paintings. But Hedge can only do a few things:
- He can paint one small square (pixel) at a time.
- He can move forward.
- He can turn 90 degrees.

The paintings are like grids, and Hedge needs to paint an 'X' on any size grid. How can Ethic tell Hedge how to do this?"

"One clever way to solve this is to think of the 'X' as a series of squares inside each other, like circles with the same center. These are called 'concentric' squares.

Here's how Hedge can do it:

1. **Start:** Begin at a corner and paint that pixel.
2. **Move:** Move forward a certain number of spaces, then paint another pixel.
3. **Turn:** Turn right and do it again, making a square.
4. **Repeat:** Do this until you have painted the outer square.
5. **Go Inward:** Move a little bit inward, turn, and repeat the process for the next smaller square inside.
6. **Keep Going:** Keep doing this until you reach the center.
7. This method is good because it uses the same steps over and over, making it easy for Hedge to understand, no matter how big the painting is."

Activity 1
Spot the Mistake!

"In this exercise, you'll read sentences that have one grammatical error. Your task is to find the mistake and correct it. The errors will focus on:
● **Prepositions:** Incorrect use of words like 'in', 'on', 'at', 'to', etc.
● **Collocations:** Words that don't naturally go together.
● **Future Simple:** Incorrect use of 'will' or 'be going to'.
● **Passive Voice:** Mistakes in the structure of passive sentences.

    Example:
● **Incorrect:** "I'm going to visit**ing** my friend tomorrow."
● **Correct:** "I'm going to visit my friend tomorrow."
● Now, let's test your detective skills!"

Exercises
Instructions: Find the mistake and correct it.

Exercise 1: "The pictures were took down from the wall."
_____
_____

Exercise 2: "If it will rain, we stay inside."
_____
_____

Exercise 3: "They made a mistake on the plan."

_____
_____

Exercise 4: "She did a fast decision.

_____
_____

Exercise 5: "The letter was write by him."

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_____

Exercise 6: "I think it will to be sunny tomorrow."

_____
_____

Exercise 7: "They did an agreement with the store."

_____
_____

Exercise 8: "He is looking at the answer on his book."

_____
_____

Activity 2
Gap Fill
What Is the Missing word?

Word Bank: Processor, Exhibited, Garrison, Agitated, Concentric, Simulating, Deface, Vandalism, Thwart, Sanctuary

1.   The art gallery _____ modern sculptures.
2.   The old fort had a small _____ of guards.
3.   The teenagers decided to _____ the school walls with graffiti.
4.   The scientist was _____ a chemical reaction in the lab.
5.   The loud music _____ the neighbors.
6.   The bird built a nest in the quiet _____ of the garden.
7.   The computer's _____ was running slowly.
8.   The maze had _____ circles that led to the center.
9.   The security system tried to _____ the burglar's plan.

Say It!
Pronunciation

Read the dialogue aloud and practice the key lexis
Octavia: "We must act quickly. The tower is heavily guarded. The **garrison** will be a problem. We need a distraction."
Ethic: "How do we distract them?"
Octavia: "The residents here are very proud of their paintings. We need to do some well-intentioned **vandalism**. Hedge, can you **deface** their portraits with an X?"
Hedge: "I can try, but my painting **processor** requires precise instructions. I'll be **simulating** the path to make sure I get it right."
Octavia: "Perfect. If we can get them **agitated**, they'll draw the guards away. The tower is surrounded by **concentric** walls. It will be hard to get through."
Ethic: "We need to move fast, before they realize we are trying to **thwart** their defenses. This treehouse **sanctuary** was meant to be a safe place, but now it's a battleground."
Hedge: "I see that the paintings are being **exhibited** all over the town square. I will begin my work."

Put It into Practice!

Write your responses or discuss
   Agitated:
What's a funny situation that might make your friend get really agitated?
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_____
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   Thwart:
What's a silly plan you'd try to thwart if you were a superhero?
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   Garrison:
 Imagine you're in charge of a small garrison of soldiers. What mission would you send them on?
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Exhibited:

If you could have a talent exhibited in a public place, what talent would you choose?

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Review
Grammar and Keywords

Keywords

● **Sanctuary:** A safe and peaceful place. Think of it like a quiet garden where you can relax.
● **Exhibited:** Shown or displayed for everyone to see. Like when your art is shown in a school show.
● **Garrison:** A group of soldiers protecting a place. Imagine toy soldiers guarding a castle.
● **Thwart:** To stop someone from doing something. Like stopping someone from taking your cookie.
● **Vandalism:** Damaging or destroying property on purpose. It's like drawing on walls that you shouldn't.
● **Deface:** To damage the appearance of something. Like putting stickers all over a clean notebook.
● **Simulating:** Making a model of something to see how it works. Like playing with a toy car to see how real cars move.
● **Concentric:** Circles or shapes that have the same center. Like the rings when you drop a pebble in water.
● **Agitated:** Upset or disturbed. Like when you can't find your favorite toy.
● **Processor:** The part of a computer that does the calculations. Like the brain of a computer.

Grammar Review - Brief Summary
Passive Voice

● Remember, the passive voice is used when the action is more important than who did it.
● Example: "The pictures were taken down." (We care about the pictures, not who took them down.)
● We saw mistakes with the verb form: "were took" instead of "were taken."

Future Simple:
● We use "will" or "be going to" to talk about the future.
● Example: "If it rains, we will stay inside."
● We saw mistakes with conditional sentences, and with extra "to"s.

Prepositions:
● These are little words like "in," "on," "at," and "for" that tell us where or when something is.
● Example: "They made a mistake in the plan." (Not "on.")
● We saw errors with incorrect preposition choices.

Collocations:
● These are words that usually go together.
● Example: "Make a decision." (Not "do a decision.")
● We saw errors with using the incorrect verb with a noun.