Activity 2: Computer Problem Solvers

Working Together When Things Go Wrong (Grades 3-5)

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> ❗ Teacher Overview
>
> Students form response teams to investigate and solve realistic technology problems at their school. Each team member has a specific job, and they work with an AI helper to figure out what went wrong and how to fix it. This activity introduces the concept of incident response—what cybersecurity professionals do when something goes wrong.
> **Duration**: 35-40 minutes **Grade Levels**: 3-5 **Group Size**: Teams of 4 students **Technology**: One device per team (or teacher-guided AI consultation)

Learning Goals

Students will:

- Understand that **different people have different jobs** during a technology problem
- Practice **working as a team** to investigate and solve problems
- Learn that **AI helpers are part of the team** but people make decisions
- Experience basic **problem-solving steps** professionals use

CYBER.org Standards Alignment (3-5)

- **3-5.SEC.ACC**: Understanding access and safety procedures
- **3-5.DC.ETH**: Digital ethics and responsibility
- **3-5.DC.THRT**: Recognizing and responding to threats

Team Roles

Each team has 4 jobs:

The Detective

- Looks at the clues and evidence
- Asks: “What do we notice? What’s different?”
- Reports findings to the team

The AI Partner

- Works with the computer helper

- Asks good questions
- Shares what the AI helper says

The Recorder

- Writes down what the team discovers
- Keeps track of decisions
- Documents the solution

The Reporter

- Shares the team's findings with the class
- Explains what happened and how they fixed it
- Answers questions from other teams

The Problem

Mystery at Maple Elementary!

Read aloud to students:

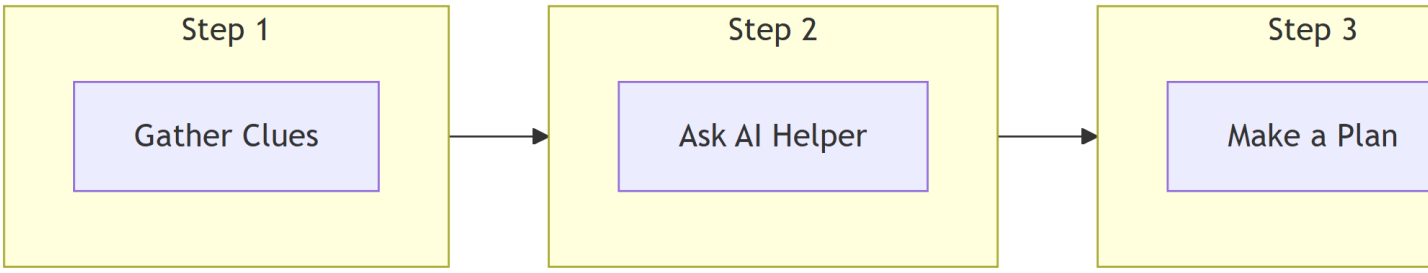
It's Monday morning at Maple Elementary School. Mrs. Chen's 4th-grade class arrives to find something wrong:

- The classroom computers are acting strange
- Pop-up messages keep appearing saying "CONGRATULATIONS! You WON!"
- Some websites they use for learning won't load
- The computers are running very slowly

The principal asks your team to help figure out what happened and how to fix it!

Your job: Work together to investigate the problem, find out what went wrong, and help Mrs. Chen's class get back to learning.

Investigation Steps



Problem-Solving Steps

Step 1: Gather Clues (5 minutes)

Detective reads the Evidence Card to the team:

Evidence Card: What We Know

Timeline: - Friday afternoon: Everything was working fine - Monday morning: Problems started

Clues: - Pop-ups say "Click here for your prize!" - Mrs. Chen remembers a student clicked on an email last Friday - Other classrooms are NOT having this problem - The pop-ups have spelling mistakes: "Congradulations!"

Questions to think about: - Why would only ONE classroom have this problem? - What might have happened on Friday? - Why do the pop-ups have spelling mistakes?

Step 2: Ask the AI Helper (10 minutes)

AI Partner asks these questions (one at a time):

Question 1: > "We found pop-up messages on school computers that say we won a prize. They have spelling mistakes and appeared after someone clicked an email. What kind of problem is this?"

What to listen for:

- This sounds like malware or a computer virus
- The email was probably a trick (phishing)
- Spelling mistakes are a clue that it's fake

Question 2: > "How do bad programs like this get on computers?"

What to listen for: - Clicking links in tricky emails - Going to unsafe websites - Downloading things that look fun but aren't safe

Question 3: > "What should we do to fix this problem?"

What to listen for: - Tell an adult (teacher, IT person) - Don't click on the pop-ups - The IT team might need to clean the computers - We can't fix it ourselves—we need experts

Recorder writes down: What the AI helper said about each question.

Step 3: Make a Plan (5 minutes)

Team discusses and decides:

What happened? - [ ] Someone clicked a tricky email - [ ] A bad program got on the computers - [ ] Something else: _____

Who needs to know? - [ ] The teacher - [ ] The IT person - [ ] The principal - [ ] Other: _____

What should students do RIGHT NOW? - [ ] Stop using the computers - [ ] Don't click the pop-ups - [ ] Tell an adult - [ ] Other: _____

What will the IT team probably do? - [ ] Clean the bad program off the computers - [ ] Check if other computers are affected - [ ] Help students learn not to click tricky emails - [ ] Other: _____

Step 4: Report to the Class (10 minutes)

Reporter shares:

1. **What we found:** _____
2. **What we think happened:** _____
3. **Our solution:** _____
4. **How AI helped us:** _____
5. **What we would do differently next time:** _____

Class Discussion (5 minutes)

Talk about as a class:

1. **Why did we need a team?**
   - One person couldn't investigate everything alone
   - Different jobs helped us work faster
   - We caught things others might have missed
2. **How did the AI helper help?**
   - Knew about computer problems
   - Explained what the clues meant
   - But WE had to decide what to do!
3. **What's the big lesson?**
   - Don't click on emails or messages you don't expect
   - If something looks too good to be true, it probably is
   - When something goes wrong, work together to fix it

Key Teaching Points

What We Learned

Real cybersecurity teams work like this!

- Different people have different jobs
- Everyone contributes something important
- AI tools help professionals investigate too

When something goes wrong:

1. Stay calm
2. Gather information
3. Ask for help from experts
4. Work together to solve it

Prevention is important:

- Be careful what you click
- If something seems wrong, tell an adult
- Mistakes happen—learning from them matters

Variations

Simpler Version (3rd Grade)

- Teacher reads all materials aloud
- Whole class does investigation together
- Focus on 2 roles: Detective and Reporter
- AI consultation done by teacher

Extended Version (5th Grade)

- Add more complex scenarios (see below)
- Students write their own AI questions
- Create prevention posters for other classes
- Present findings to another class

Alternative Scenarios

Scenario 2: The Slow Network > All the tablets in the library are running super slowly. Videos won't load and websites keep timing out. What's wrong?

Scenario 3: The Missing Assignment > A student's project disappeared from the shared folder. The teacher didn't delete it. What might have happened?

Scenario 4: The Strange Message > Students are getting messages from someone pretending to be their friend, asking for their password. How should they respond?

Low-Resource Option

If no AI access is available, use these pre-written AI responses:

About the pop-ups: > "Pop-up messages claiming you won a prize are almost always fake, especially if they have spelling mistakes. Real contests don't work this way. These are usually caused by malware—programs that got on your computer without permission. They often arrive when someone clicks a link in a tricky email."

About how it spreads: > "Bad programs like this usually get on computers in a few ways: clicking links in emails that look real but aren't, downloading games or apps from unsafe websites, or plugging in USB drives that have problems. Once on one computer, they can sometimes spread to others on the same network."

About fixing it: > "This isn't something students should try to fix themselves. The school's IT team has special tools to remove bad programs safely. The most important things students can do are: tell an adult right away, don't click on any pop-ups, and remember this experience so they can avoid tricky emails in the future."

Assessment

Observation Checklist

Behavior	Team 1	Team 2	Team 3	Team 4
Stayed in assigned role				

Behavior	Team 1	Team 2	Team 3	Team 4
Shared clues with team				
Asked thoughtful AI questions				
Made a reasonable plan				
Could explain what went wrong				
Understood why teamwork helped				

Reflection Questions

After the activity, ask students to write or discuss:

1. What was your job on the team? How did you help?
2. What did the AI helper teach us?
3. Why couldn't the AI helper fix the problem by itself?
4. What will you do differently when you use computers now?

Assessment Connection

This table shows how activity elements connect to the Human-AI Collaboration Rubric criteria:

Rubric Criterion	Developed Through	Evidence Source
AI Partnership Framing	AI Partner role: "Works with the computer helper"	Quality of questions asked to AI
Complementary Strengths	Class Discussion: "How did the AI helper help?" vs. "We had to decide"	Written/verbal reflection responses
AI Limitation Awareness	Reflection question 3: "Why couldn't AI fix it by itself?"	Response to Step 2 AI consultation and reflection
Synthesis Quality	Step 3: Make a Plan using AI insights + team judgment	Completed plan checklist and rationale
Human Context Application	Team roles bringing different perspectives to solution	Reporter presentation explaining team decisions

Applicable Rubrics: Human-AI Collaboration Rubric

Take-Home Connection

Message for families:

> "Today your child was part of a 'Computer Problem Solver' team! They investigated a realistic technology problem—computers infected with fake pop-up messages—and worked with teammates and an AI helper to figure out what went wrong.
>
> **What they learned:** - How to recognize fake messages (spelling mistakes, too-good-to-be-true prizes) - That clicking unknown links can cause problems - That teamwork and experts work together to solve technology problems - That AI can help investigate but people make the decisions

Talk about at home: - Have you ever seen a pop-up that looked suspicious? - What should we do if we're not sure about a message or link? - Who can we ask for help with computer problems?"

Teacher Notes

Connecting to Real Life

This activity mirrors what really happens in organizations:

- **Security Operations Centers (SOCs)** have teams investigating problems
- **Incident response** follows similar steps: identify, analyze, contain, recover
- **AI tools** are increasingly used to help professionals investigate

Preparation Checklist

☐ Print Evidence Cards (one per team)
☐ Prepare role cards or badges
☐ Test AI access OR prepare response cards
☐ Create team recording sheets
☐ Plan team assignments

Common Questions

"Can we really not fix this ourselves?" > That's right! Some problems are too complex and need special tools. The smart thing is to know when to ask for help.

"Why did the AI know what was wrong?" > AI systems have learned about many computer problems. But they can't actually FIX the problem—they can only help us understand it.

"Could this happen at our school?" > These kinds of problems can happen anywhere. That's why it's important to be careful with emails and links!