Fix It First

Students ask useful questions and connect simple problems to helpful tools.

K-2-ETS1-1 "Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool."

NAME _____ DATE _____

Teacher: this page is run aloud. The script and answers are on the guide page.

1 ASK FIRST

a

Where?	Pages?	Dark?

b

Weight?	Color?	Sound?

2 TOOL MATCH

Spills	•	•	Cart
Dark	•	•	Tray
Heavy	•	•	Lamp

3 NOTICE AND ASK

Notice	
Problem	

ANSWER KEY # Fix It First

GRADE 1 · K-2-ETS1-1

HOW TO RUN THIS PAGE

Tell students that engineers notice a problem and ask questions to learn more before making or improving a tool. For example, if a door is hard to open, questions can help people decide what needs to change. Read every situation and every choice aloud. Also set up a real changeable classroom situation: place several round pencils on a slightly tilted tray where they roll, with a catch area. Each child observes, asks a complete question, listens to an answer based on the setup, and defines the problem. Scribe the child's words if needed.

Students never read directions on this sheet. Read each part's script aloud, then each prompt, giving think time before students mark.

PART 1 · ASK FIRST

SAY "Listen to each situation. I will read the choices. Which question would help you learn more? Circle it."

ROW	SAY	STUDENTS CIRCLE
a	Water spills when a cup moves across a table. Which question would help you learn more about the spill: "Where?", "Pages?", or "Dark?"?	**Where?**
b	A bag is too heavy to carry. Which question would help you learn more: "Weight?", "Color?", or "Sound?"?	**Weight?**

PART 2 · TOOL MATCH

SAY "Each word on the left names a problem. I will read the problem words and the tool words. Which tool could be made or improved to help with each problem? Draw a line from each problem to a tool."

- **Spills** matches **Tray**
- **Dark** matches **Lamp**
- **Heavy** matches **Cart**

PART 3 · NOTICE AND ASK

SAY "Watch the pencils on our tray. What do you notice? Ask me one question to learn more, such as when they roll or what keeps them on the tray. I will answer by showing or testing the setup. In the first box, draw what you noticed; tell me your question and what you learned so I can record it on the back. In the second box, draw the problem you want to change and tell why a new or improved object could help. You do not have to build it yet."

- Box 1 (beside Notice): **Drawing matches the actual observation; teacher records a child-asked question and information gained, rather than only a question word.**
- Box 2 (beside Problem): **Child defines an observed problem, such as pencils rolling away, and explains a tool/object need based on gathered information; a rim or holder is one possible idea.**

WHAT TO ACCEPT

Ask First: circle Where? for the spill and Weight? for the heavy bag. Tool Match: Spills to Tray, Dark to Lamp, and Heavy to Cart. For Notice and Ask, check the actual observation, child-asked question, information received and defined problem. The teacher records the question and answer on the back, accepting speech or dictation. A different safe, observable classroom problem is acceptable; match the record to what actually happened, including no rolling. Do not score a copied question word as an asked question, or require a predetermined design.