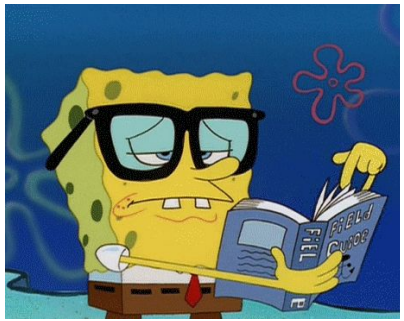
Restating the Problem

@BootstrapWorld

Focusing on Purpose Statements

The "Three Reads" Strategy

1st Read



Teacher reads the word problem. Students discuss:
What is this word problem about?

2nd Read

Partner A reads the word problem. Students discuss:
What are the quantities?

3rd Read

Partner B reads the word problem. Students discuss:
What is a good Purpose Statement?

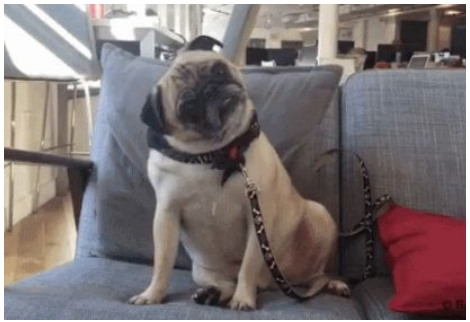
Focusing on Purpose Statements

The "Stronger & Clearer" Strategy

Response 1

Write (and/or draw!) your understanding of the word problem.

Structured Meetings



Meet with another student, and share drafts. Ask clarifying questions and make suggestions.

Response 2

Write a second draft, demonstrating your understanding of the word problem.

Focusing on Purpose Statements

Use the "Three Reads" and "Stronger & Clearer" strategies on **Writing Quality Purpose Statements** to write really good purpose statements, completing at least three word problems from **the next three pages.**

Focusing on Purpose Statements

Which step in the Design Recipe are you most confident about?

Which step in the Design Recipe are you *least* confident about?

Students, write your response!

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Design Recipe Games

For hard problems, knowing how the parts of the Design Recipe fit together will let you use each step to help you write the next one.

Once you know how everything fits together, you'll be able to make fewer mistakes - and even check your work when you do!

Design Recipe Games

Teams of three (**1**, **2** and **3**) get three word problems: **A**, **B** and **C.**

Design Recipe Telephone

1. Write the Contract & Purpose...*then fold back the word problem* so it cannot be seen, and *pass your paper to the right*. Now student **1** has problem **C**, **2** has **A**, and , **3** has **B.**

2. Write examples, then circle & label...*then fold back the Contract and Purpose* so it cannot be seen, and *pass your paper to the right*. Now student **1** has **B**, **2** has **C**, and, **3** has **A.**

3. Write the Definition, then unfold the papers. Does each step match?

Design Recipe Games

Design Recipe Telephone

Problem A

"Write a function `marquee` that takes in a message and returns that message in large gold letters."

Student 1

```
# marquee :: String -> Image
# Consumes a message and prints it in big gold letters.
```

Student 2

message

```
examples:
   marquee("Wow!")  text( "Wow!", 40, "gold")
   marquee("Oh no!") text("Oh no!", 40, "gold")
end
```

Student 3

```
fun marquee(message):    text(message, 40, "gold")
end
```

Design Recipe Games

Two students (**1** and **2**) start with a **finished Design Recipe.**

Where'd You Get That?

1. Beginning with the Definition at the bottom of the page, **student 1** points to the function name and asks "Where'd you get that?" **Student 2** explains, using only what is written in the example step above. Repeats for everything in the Definition.

2. **Student 2** points to the function name in the first example, and asks "Where'd you get that? **Student 1** explains, using only what is written in the Contract & Purpose above. Repeat for everything in the Examples.

3. They switch places and repeat for the Contract & Purpose, now pointing back to the word problem.

Design Recipe Games

Write a function `marquee` that takes in a message and returns that message in large gold letters.

Contract and Purpose Statement

Every contract has three parts...

```
# marquee:: String -> Image
```

function name | *domain* | *range*

```
# Takes in a message and returns an image of it in large gold letters
```

what does the function do?

Where'd You Get That?

Examples

Write some examples, then circle and label what changes...

```
examples:
  marquee ( "Wow!" ) is text("Wow!", 40, "gold")
  marquee ( "Oh no!" ) is text("Oh no!", 40, "gold")
end
```

message

function name | *input(s)* | *what the function produces*

Definition

Write the definition, giving variable names to all your input values...

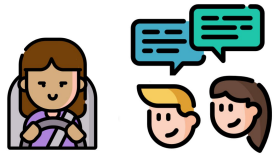
```
fun marquee ( message ):
  text(message, 40, "gold")
end
```

function name | *variable(s)* | *what the function does with those variable(s)*

Design Recipe Games

Practice - no computer required

1. Replicate what you saw in the **Wage problem**.
2. Compare your answers with the group.
3. Play "Where'd You Get That?" with your team!
4. Complete **Marquee** and play again!



5. Using **Slope-Intercept 1** **and** **Slope-Intercept 2** in your workbooks, play Design Recipe Telephone

Design Recipe Games

The Design Recipe is a way of slowing down and thinking through each step of a problem.

If we already know how to get the answer, why would it ever be important to know how to do each step the slow way?

Students, write your response!

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