



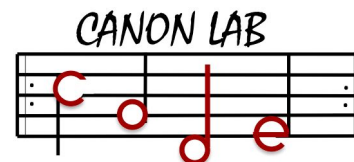
EXPLORING STUDENT BEHAVIOR USING THE TIPP&SEE LEARNING STRATEGY

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 @SaladwithaC



*Computing for ANYONE:
Designing for equity and inclusion*



CS/CT instruction must support all learners.





Title

Sprites

Instructions

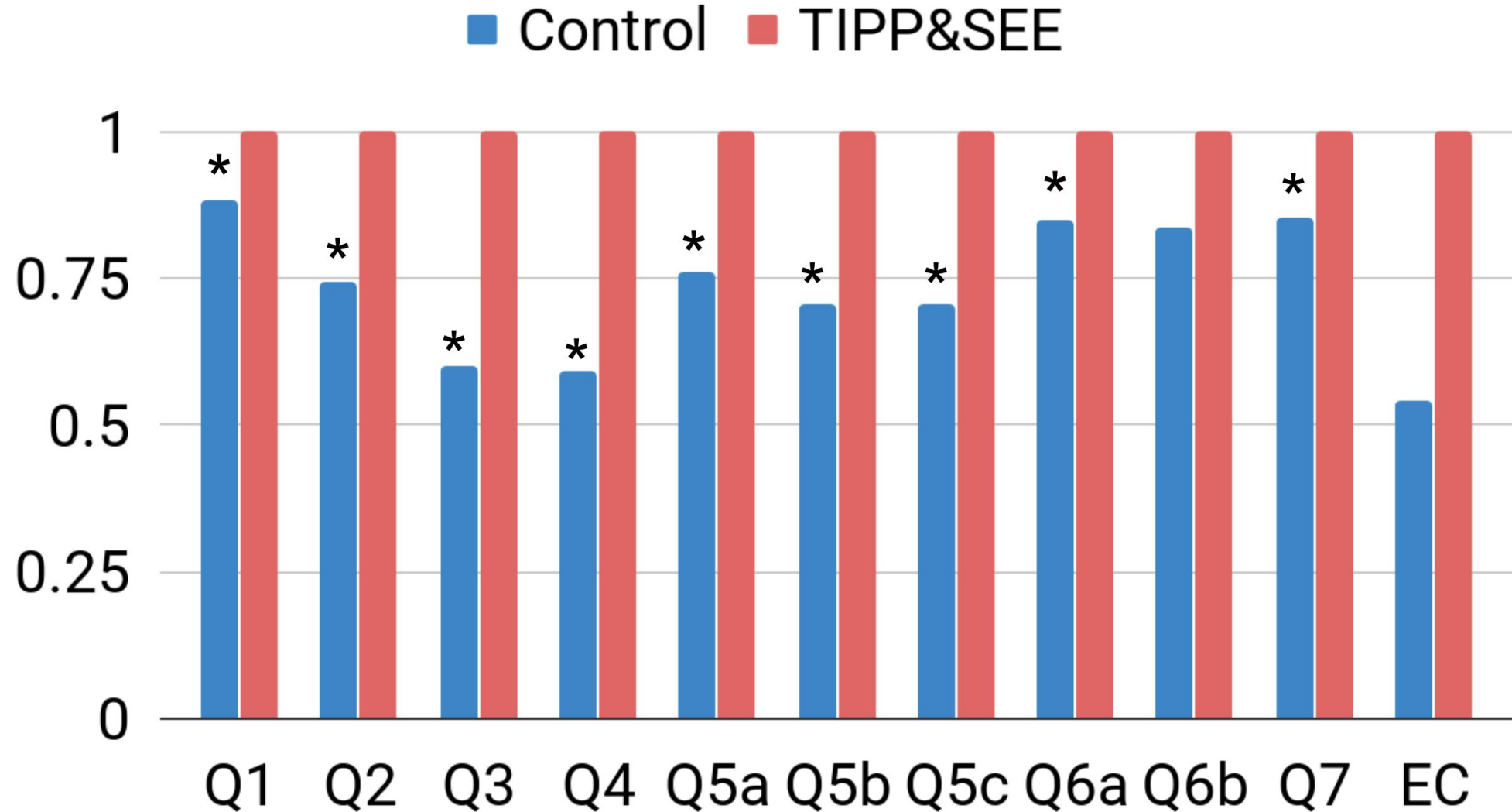
Events

Purpose

Explore

Play

Stronger Performance from TIPP&SEE Students



Why did TIPP&SEE students perform better?



Scratch Projects

EVENTS OF RENDA (continued)

Circle what you learned:

4. Predict which block makes the sprite bigger.

change size by 100 say I am Grandpa John. for 2 seconds change size by -100

5. Predict which block makes the sprite smaller.

change size by 100 say I am Grandpa John. for 2 seconds change size by -100

6. Predict which block makes the sprite talk.

change size by 100 say I am Grandpa John. for 2 seconds change size by -100

Tinker Time! Explore Left sprite's script. Circle the answers

- Change the number in the change size by 100 block to 200. Bigger numbers make the sprite **BIGGER** or **SMALLER** ?
- Change the number in the change size by -100 block to -300. Bigger numbers with a **negative sign** in front make the sprite **BIGGER** or **SMALLER** ?

Your Quest: Put your family members in the Ofrenda!

- Left Sprite: Change the **Costume** and **Say** blocks
- Middle & Right Sprites:
 - Add scripts using a when this sprite clicked block
 - Select a **Costume** for each sprite
 - Use the **Say** blocks to tell your story

OTHER BLOCKS TO PLAY WITH

think [] for [] seconds when space key pressed

play sound [] until done

go to x: [] y: []

space
left arrow
right arrow
down arrow
up arrow

Change Costume:
1. For each Sprite, click on the Costumes tab



2. Then click on a Costume

TIPP&SEE Worksheets

No individual actions explained the results.



Scratch Projects

EVENTS OF RENDA (continued)

Circle what you learned:

4. Predict which block makes the sprite bigger.



5. Predict which block makes the sprite smaller.



6. Predict which block makes the sprite talk.



Tinker Time! Explore Left sprite's script. Circle the answers

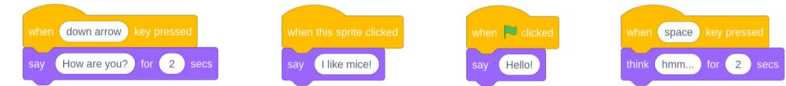
- Change the number in the block to 200. Bigger numbers make the sprite **BIGGER** or **SMALLER** ?
- Change the number in the block to -300. Bigger numbers with a **negative sign** in front make the sprite **BIGGER** or **SMALLER** ?

TIPP&SEE Worksheets

Events and Sequence

Scratch Username: _____

The scripts below belong to a sprite named Cat:

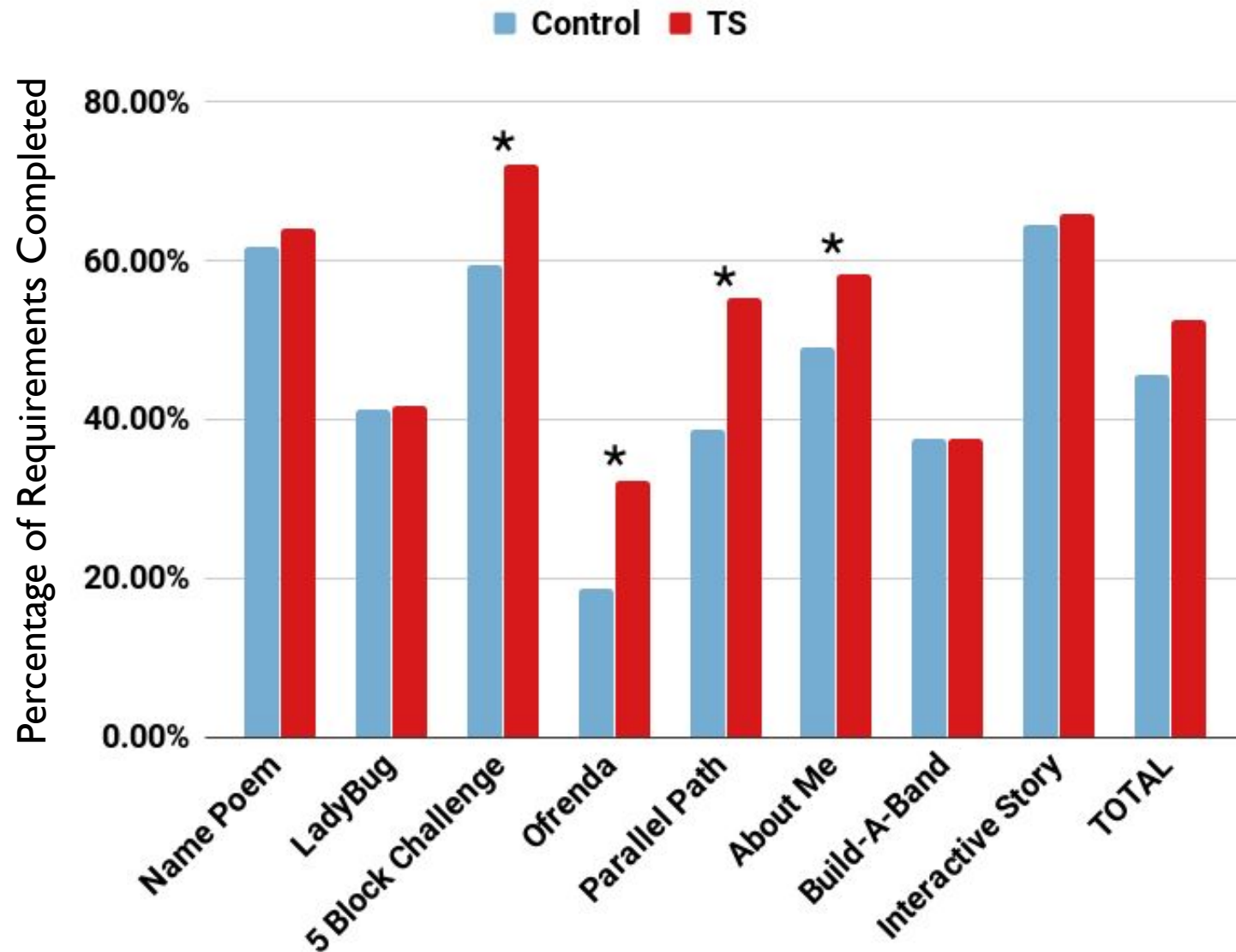


1. Circle: What should you do to make Cat say "Hello!"?

- A. Press the space key
- B. Click the green flag
- C. Press the down arrow
- D. Click the sprite

Assessments

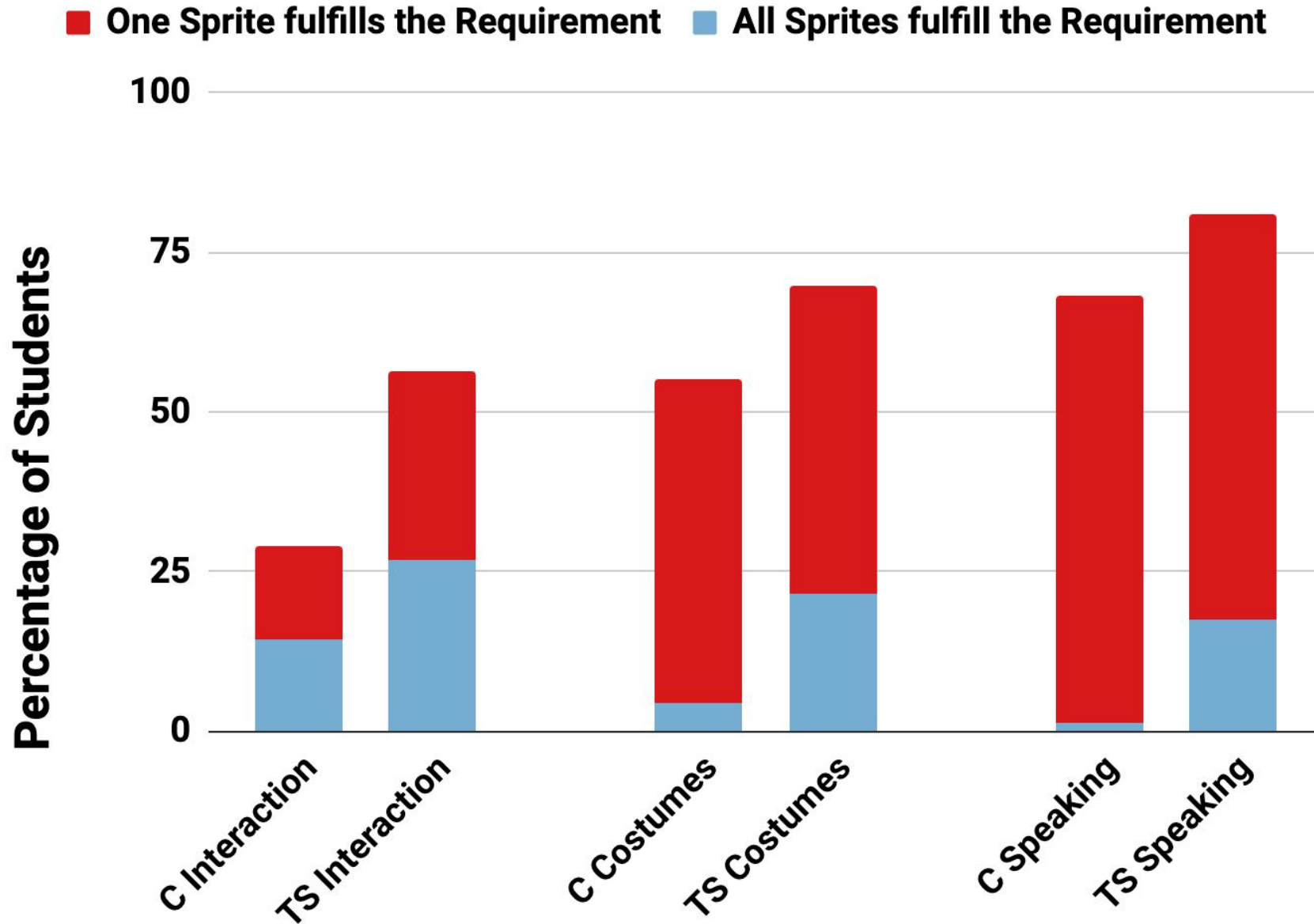
TIPP&SEE students had equal or higher project completion.



Events Ofrenda: Make Sprites Interactive



TIPP&SEE students completed requirements on ≥ 1 sprites.



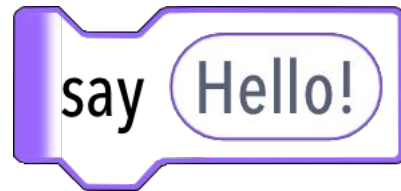
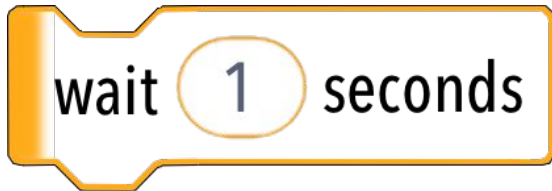
5-Block Challenge: New Blocks & Long Scripts



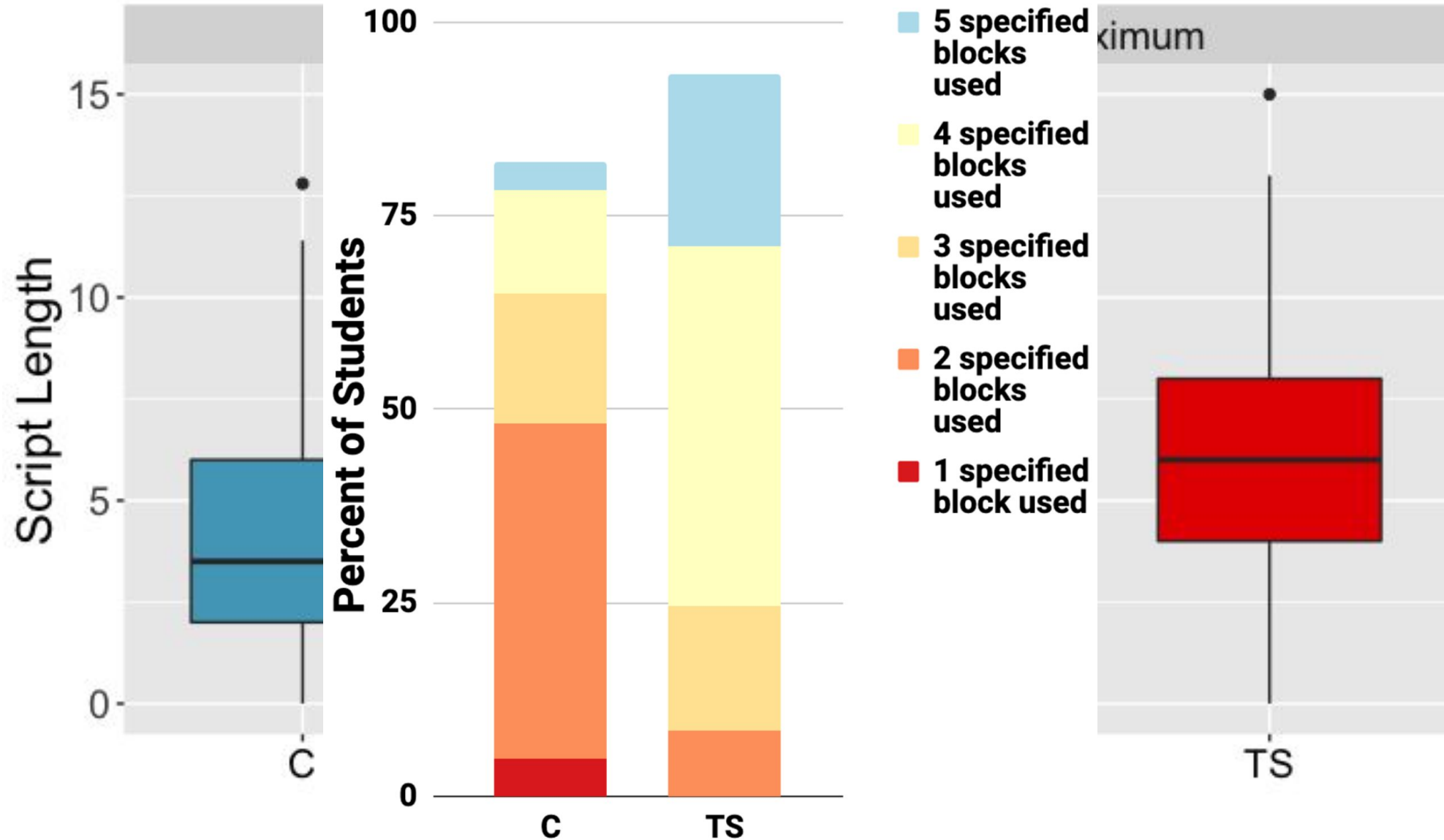
Encourage students to build:

1. with blocks they haven't learned

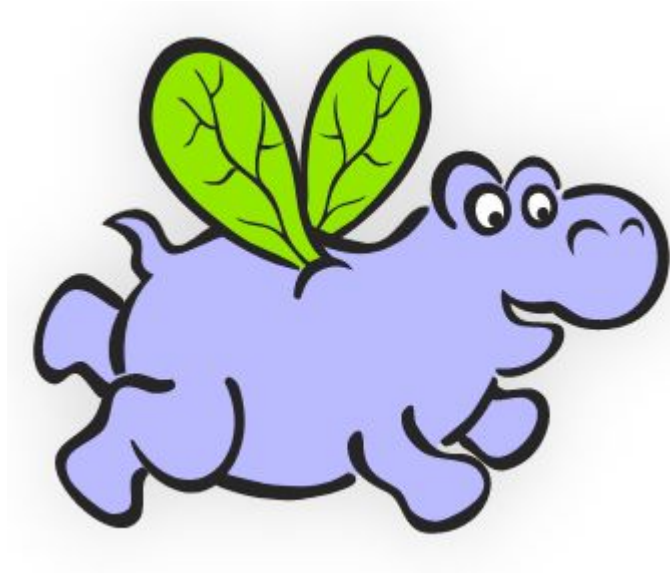
2. longer scripts with more action blocks



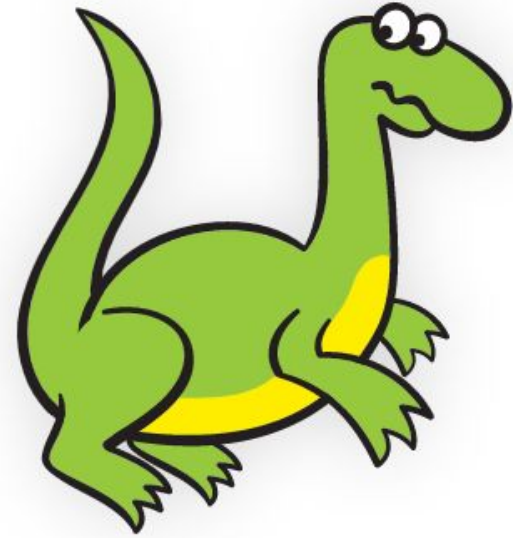
TIPP&SEE students made longer & more varied scripts.



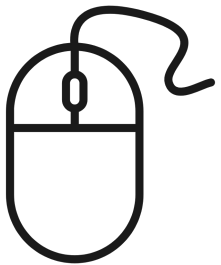
Parallel Path: Parallelism **within** & **across** Sprites



action 1 || action 2



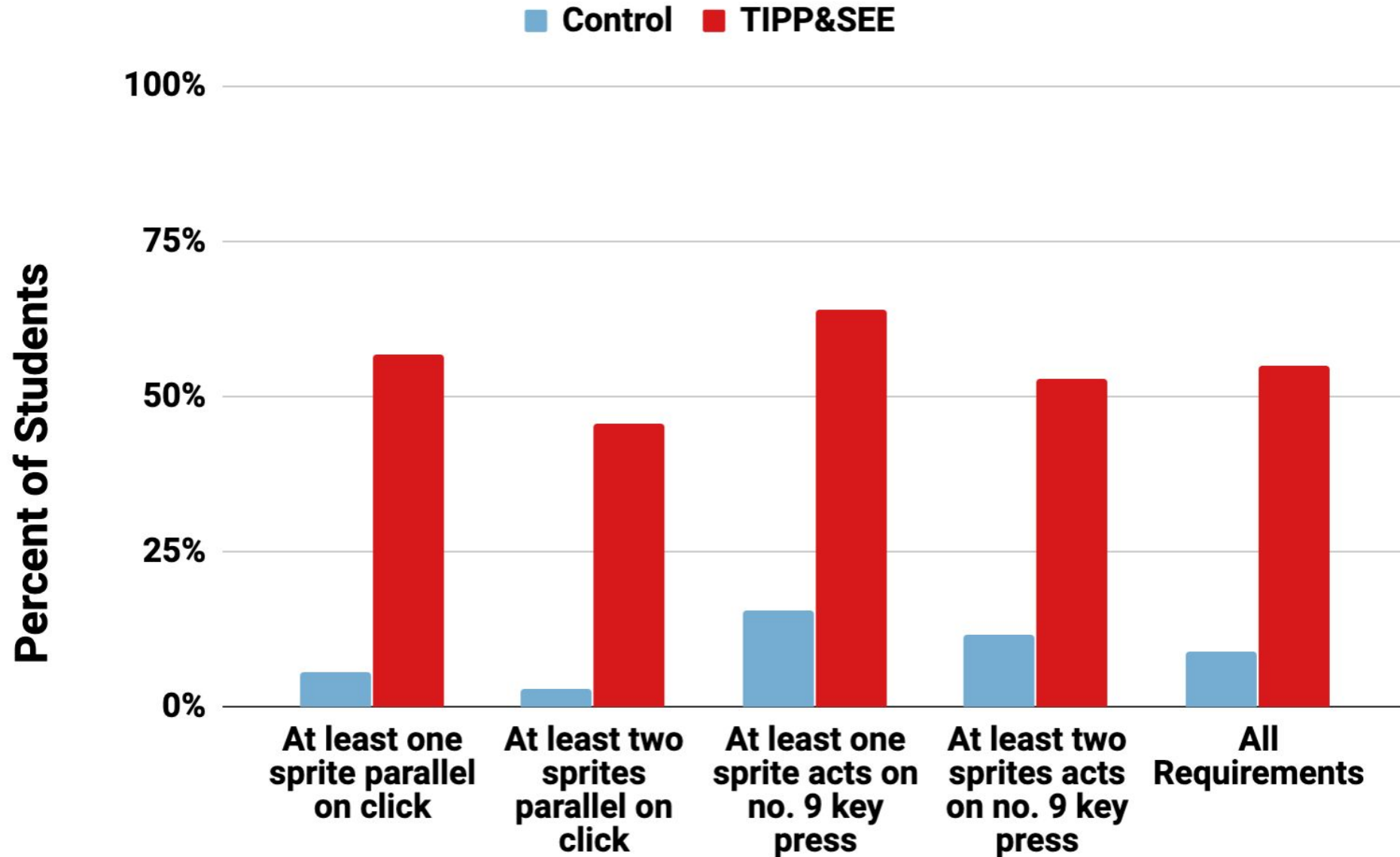
action 1 || action 2



Hippo's action ||

Dino's action

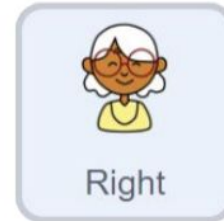
TIPP&SEE students often completed requirements.



TIPP&SEE Worksheets: Observe, Predict & Explore Questions

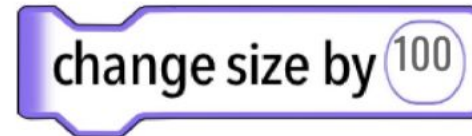
Observe

1. Who talks when I click  ?



Predict

4. Which block makes the sprite bigger?

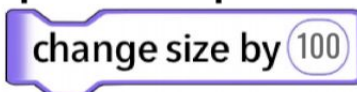


Explore

Tinker Time! **Explore** Left sprite's script. Circle the answers



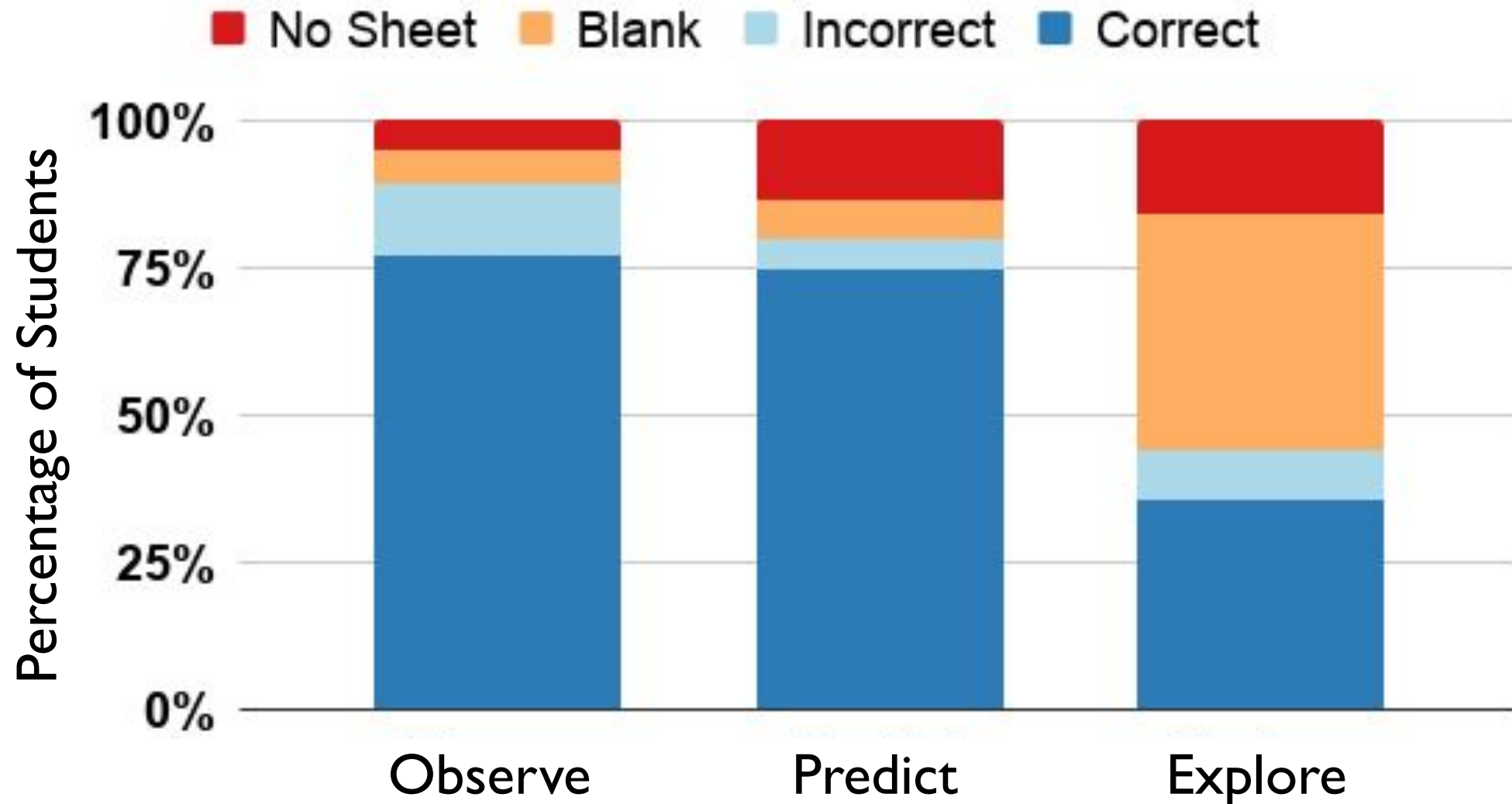
Change the number in the



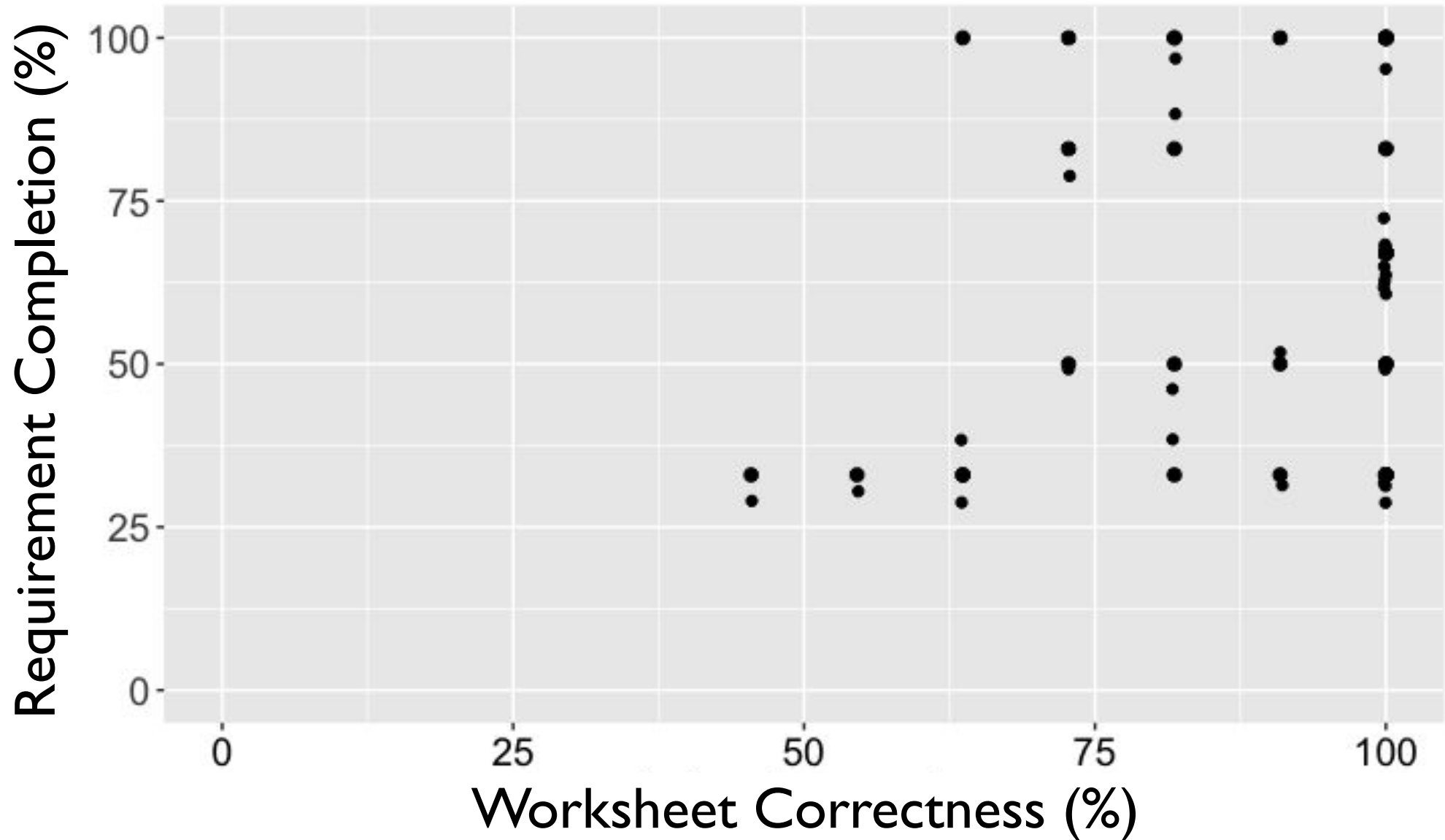
block to 200. Bigger numbers make the sprite

BIGGER or **SMALLER** ? _____

Most students completed Observe & Predict, not Explore.



Few Correlations between Projects, Worksheets, & Assessments



TIPP&SEE's Value May Lie in Metacognition



Scratch Projects

EVENTS OF RENDA (continued)

Circle what you learned:

4. Predict which block makes the sprite bigger.



5. Predict which block makes the sprite smaller.



6. Predict which block makes the sprite smaller.



Tinker Time! Explore Learning's answers

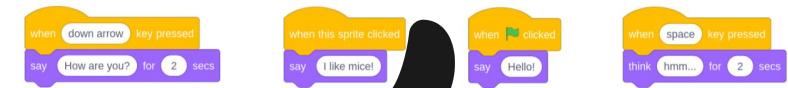
- Change the number in the 'change size by' block to 200. Bigger numbers make the sprite **BIGGER** or **SMALLER**?
- Change the number in the 'change size by' block to -300. Bigger numbers with a **negative sign** in front make the sprite **BIGGER** or **SMALLER**?

TIPP&SEE Worksheets

Events and Sequence

Scratch Username: _____

The scripts below belong to a sprite named Cat:



1. Circle: What should you do to...

- A. Press the space key
- B. Click the green flag
- C. Press the down arrow
- D. Click the sprite

Assessments

Metacognitive Strategies can help support all learners in CS.



Exploring Student Behavior Using the TIPP&SEE Learning Strategy

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Key Contributions:

Value of TIPP&SEE may lie in metacognition not directly observable.

Students using TIPP&SEE complete equal or more project requirements.

Most students complete Observe & Predict questions, but not Explore.

Few correlations between Projects, Worksheets, & Assessments.