

FRIENDS OF 20.

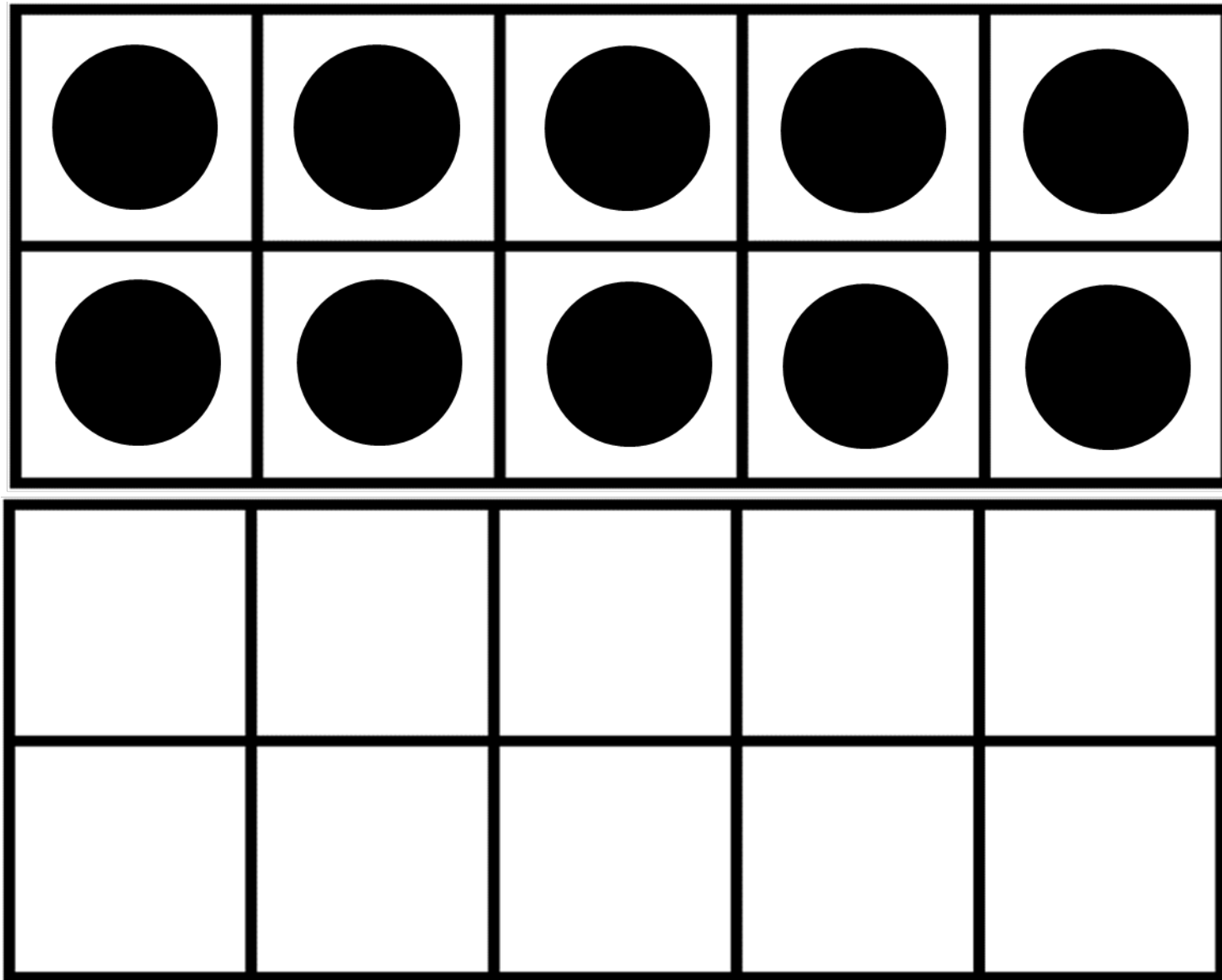
INVESTIGATIONS OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE INVESTIGATIONS THAT STUDENTS MAY ENGAGE IN TO DEEPEN THEIR RELATIONAL UNDERSTANDING. INVESTIGATIONS WITH INSTRUCTIONS TO STUDENTS FOLLOW ON SUBSEQUENT PAGES.

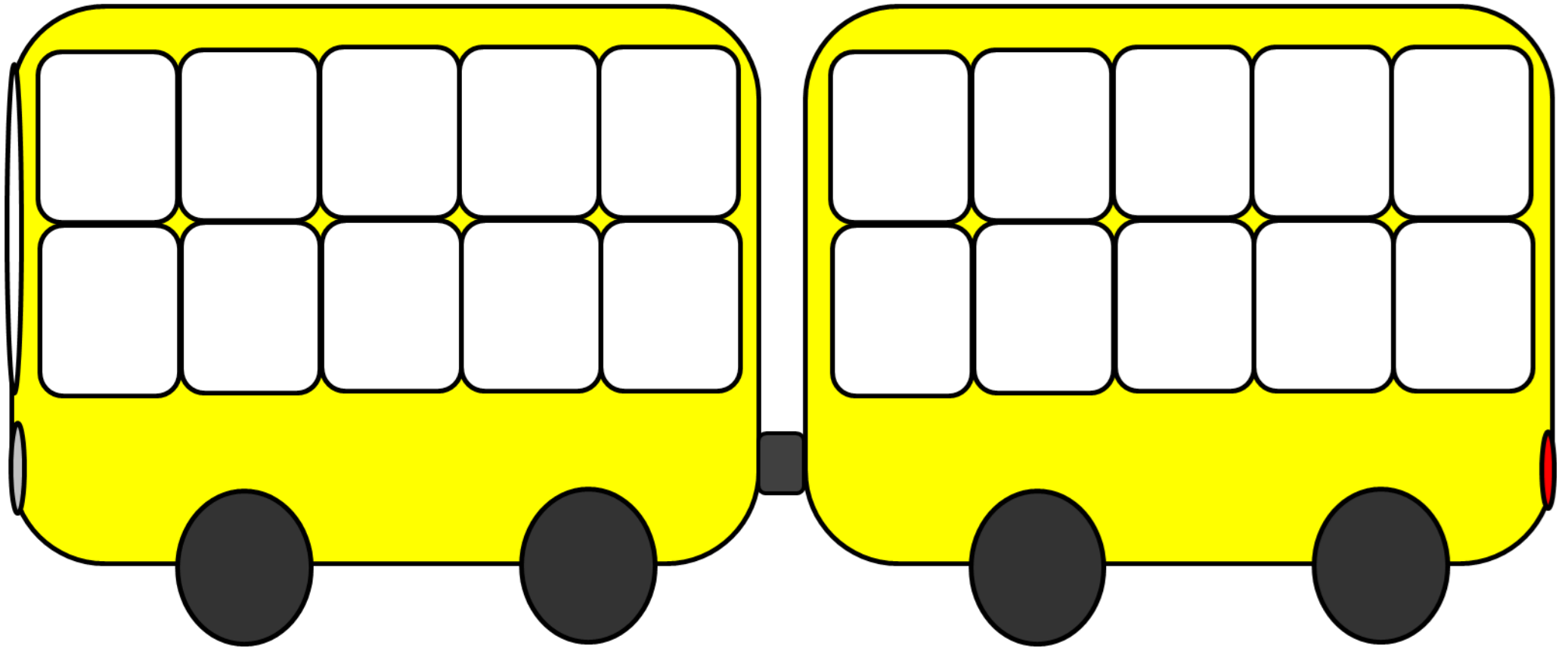
- In pairs, children place a full 10 frame on the left, and an empty 10 frame on the right. They select a single-digit number and place the corresponding number of counters onto the empty 10 frame. They record their friends of 20 in an addition number sentence. They explain the relationship between friends of 10 and friends of 20. *Reflection: How can we use friends of 10 to work out friends of 20?*
- In pairs, each child has a calculator. They enter the number 20. They select a number. They subtract the single-digit number, predicting what number they think will result explaining using friends of 20. *Reflection: What are friends of 20?*
- In pairs, children have a 20 Frame Train. One child places a teen number of counters on the train filling the carriage on the left - top row then bottom row - first, then the carriage on the right to act as children, explaining 'There are ... children on the train'. The second child says the number of empty seats on the train. *Reflection: What are friends of 20?*
- In pairs, children have a 20 Frame Train. Children place 20 counters in the carriages to act as children. One child takes some counters off the carriage on the right. The other child works out how many children are left on the train, using friends of 20 through subtraction. *Reflection: What are friends of 20?*

As they develop their understanding of Friends of 20, children will apply their understanding to add and subtract numbers bridging 20 using place value.

10 Frames (print, cut out and distribute 1 full and 1 empty 10 frame to each child)



20 Frame Train



Friends of 20

Place a full 10 frame on the left and an empty 10 frame on the right.

Select a card to and place the number of counters onto the 10 frame on the right.

Ask and answer the 4 questions:

- How many in the 10 frame on the left?
- How many in the 10 frame on the right?
- How many altogether?
- How many more to make 20?

Record your friends of 20.

Reflection: How can we use friends of 10 to work out friends of 20?

Friends of 20

Place a full 10 frame on the left and an empty 10 frame on the right.

Place 10 counters onto the 10 frame on the right.

Select a card to subtract the number of counters named on the card.

Record your friends of 20 in a subtraction number sentence.

Did you have your number's friend of 20 left?

Reflection: What are friends of 20 using subtraction?

Friends of 20

Sit with a friend.

Enter the number 20 on a calculator.

Select a single-digit number.

Use your friends of 20 to predict what number will be the result if you subtract your number.

Subtract the single-digit number.

Explain your friends of 20 using subtraction to a friend.

Reflection: What are friends of 20?

Friends of 20

Have a 20 frame train.

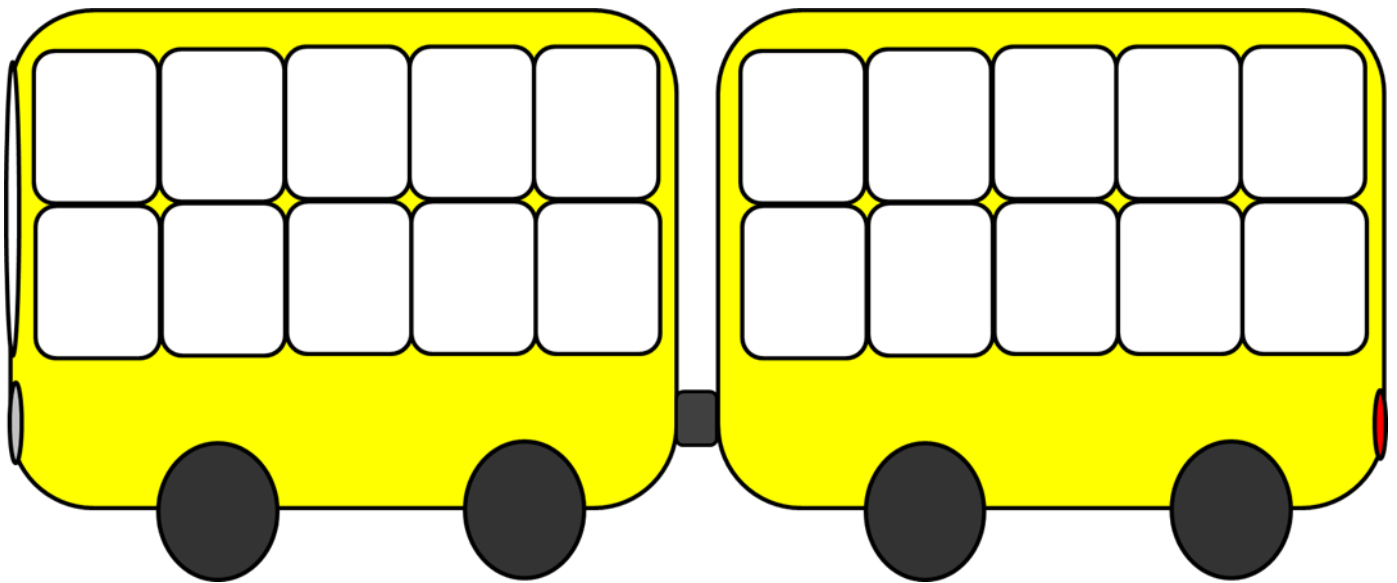
Select cards to make a teen number.

Place that number of counters onto the 20 frame train as children, filling the carriage on the left from the top row on the left first, then the carriage on the right.

Identify the number of 'children' you need to fill the train.

Record your friends of 20 through addition.

Reflection: What are friends of 20?



Friends of 20

Have a 20 frame train.

Place 20 counters onto the 20 frame train as children.

Select card to make a single-digit number.

Take the number of 'children' off the 20 frame train, emptying the bottom row from the right on the carriage on the right first, then the top row from the right on the carriage on the right.

How many 'children' are left on the train?

Record your friends of 20 through subtraction.

Reflection: What are friends of 20?

