Working with Quantities to 20

How many altogether?

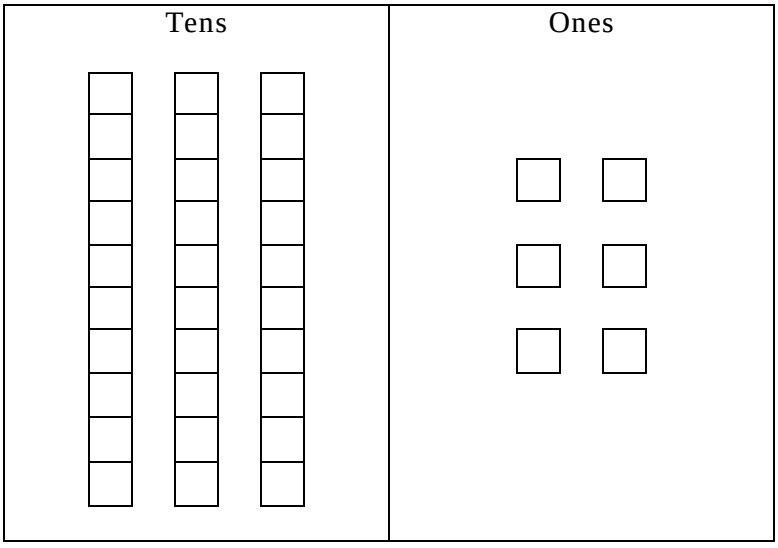
- Counting all
- Recognizing small groups but still counting all to find the total
- Recognizing small groups and counting on
- Combining groups and counting on
- Combining groups by using relationships
    - One more
    - One less
    - Double and doubles + or -
    - Making 10s
    - Adding 9s
    - Ten and Some More
- Combining groups by knowing the combinations

How many are left?

- Counting all
- Determining what is left by using knowledge of the combinations that make up the number
- Determining what is left by using knowledge of the combinations that make up the number breaking apart and recombining quantities

Working with Quantities to 100

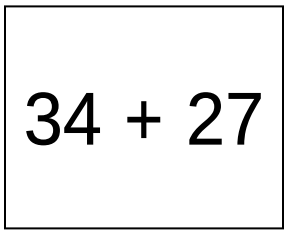
Build it Fast:
Using place value boards have students build numbers fast. For example:
Building 36 fast



As students are building 36, watch for those who can use the 10s sticks and know that they are 10s and for those that use the 10s sticks but still count them one by one.

When asking the students to build the next number (example: 52) watch for those who must clear off the boards and start over and those who can use what is already on their boards to build the next number.

When writing a problem on the board:
Write the first number in the context of a problem and ask students to build it fast. For example: "There were 34 students on the playground. Build it fast."



For the rest of the problem ask the students to think about it first and then use the models if needed. "27 more students joined them."

Addition and Subtraction Work to 100

- Breaking numbers apart and putting them together to 10
- Making 10s
- Using number relationships and strategies to 20
- 2 digit (+) or (-) 1 digit with no regrouping
  14+3 18-4 32+6
  5+22 25-5 37-6
- 2 digit (+) or (-) 1 digit crossing the next 10 (with regrouping)
  26+9 25-6 33-6
  34+7 55+9 44-7
- 2 digit (+) or (-) 10s
  35+10 30+24 47-20
  66-30 40+29 58-40
- 2 digit (+) or (-) 10 and some more with no regrouping
  34+12 45-13 12+27
  33+15 33-13 15+14
- 2 digit (+) or (-) 10 and some more with regrouping
  45+16 36-19 42-13
  15+16 17+24 29+12
- 2 digit (+) or (-) 2 digit with no regrouping
  25+24 38-16 44+22
  45-24 32+36 24+43
- 2 digit (+) or (-) 2 digit with regrouping
  26+36 47-29 53-24
  29+43 55+26 36+55

Use related problems to help students recognize that they can use what they know about one problem to help them figure out others.

26+9
36+9
9+46

Work Around 100

Use problems such as 99 plus a number, 98 plus a number, etc.

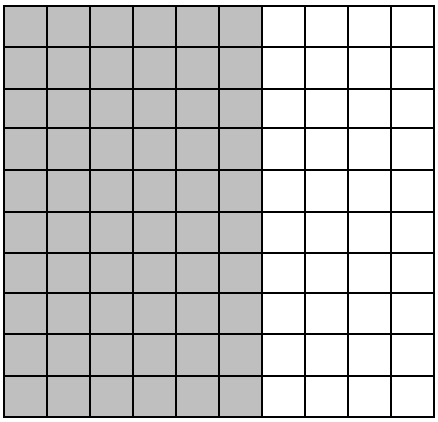
(Use connecting cubes first so students can manipulate the quantities as needed)

Build 100
What if you took 19 away?
What if you have 100 and you took 22 away?
(Watch which students go back to 100 and start over to take the 22 away and which ones take 3 more away.)

Build 102
Ask the same kinds of problems and see if the students can use what they know about 100 to help them.

Build 110, 105, 122, etc.
Use base ten blocks to do the same kinds of problems. The difference now is that they can no longer physically take the cubes away but they can use the 100 flat as a model of 100 and cover up if they need to.

Use overhead 100 flats to do problems. For example:
How many squares are not shaded?



Work Beyond 100

Use the same types of problems used with work to 100.

- 3 digit (+) or (-) 1 digit with no regrouping

114+3	118-4	132+6
5+122	125-5	137-6

- 3 digit (+) or (-) 1 digit crossing the next 10 (with regrouping)

126+9	125-6	133-6
134+7	155+9	144-7

- 3 digit (+) or (-) 10s

126+10	162-30	145+40
50+138	186-70	154-20

- 3 digit (+) or (-) 10 and some more with no regrouping

134+12	145-13	12+127
133+15	136-14	115+14

- 3 digit (+) or (-) 10 and some more with regrouping

145+16	136-19	142+13
15+116	17+124	129+12

- 3 digit (+) or (-) 2 digit with no regrouping

25+124	138-16	144+22
145-24	132+36	24+143

- 3 digit (+) or (-) 2 digit with regrouping

126+36	147-29	153-24
29+143	55+126	136+55

- Make it 200, etc. (+) or (-) 2 digit

243+13	319-12	20+322
454-24	56+427	657-34

- 3 digit (+) or (-) 1 or 2 digit crossing the next hundred

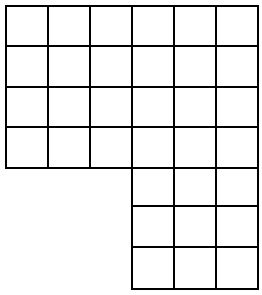
299+6	304-8	195+30
23+198	402-14	399+17

Use related problems to help students see relationship between numbers.

124+29
134+29
29+154

Work with Multiplication

Use shapes such as:



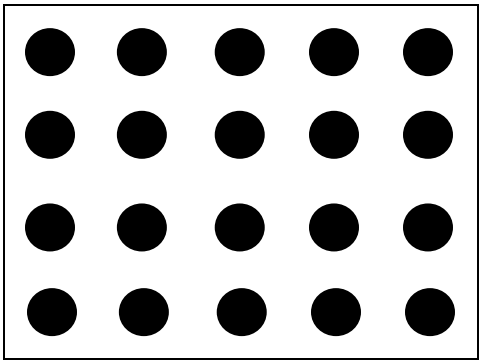
One student might see
4x6=24
3x3=9
24+9=33

Another might see
3x4=12
3x7=21
12+21=33

Another might see
3x4=12
3x4=12
3x3=9
12+12=24
24+9=33

Another student might count all

Use array cards:



One student might see
4x5=20

One student might see
5x4=20

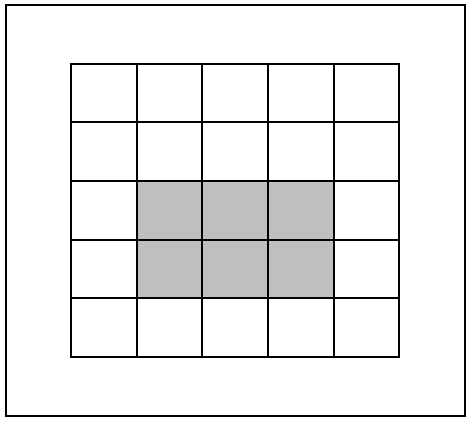
An opportunity to bring out
4x5=5x4

Another student might mount by 5s

Another student might see
5+5=10
5+5=10
10+10=20
20+5=25

Use array cards with some squares shaded:

How may squares in this array are not shaded?



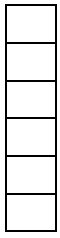
One student might say, "I see 3 fives and that's 15. Two and two on the sides of the shaded ones is four. 15 and 4 is 19."

Another student might say, "There are two fives on the sides. That's 10. There is six on the top and three on the bottom. That's nine. 10 and 9 is 19."

Another student might say, "I know 5 times 5 is 25. I see six shaded squares. 25 minus 6 is 19." This student might think of it as 25 minus 5 is 20 and 20 minus 1 is 19.

Use Towers:

What if you had three towers that looked like this?

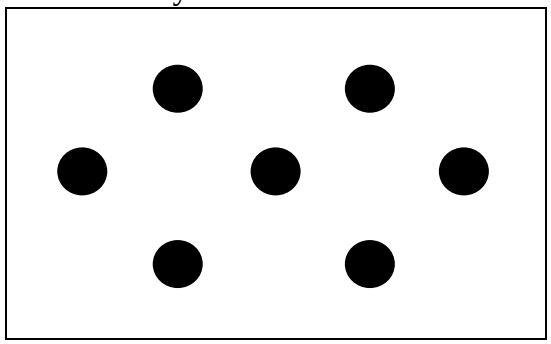


One student might say, "I know 6 and 6 is 12 so 6 more would be 18."

Another might say, "I know 3 sixes are 18."

Use Dot Cards:

How may dots?



How many dots would there be if you had three cards like this?
How do you know?

One student might say, "There would be three fives. That's 15. Then there would be three twos. That's six. 15 and 5 is 20 and 1 more is 21."

Another student might say, "I know 7 and 7 are 14. If I add another 7 that would be 21." This student might know that 14 and 7 are 21 or s/he might add 14 and 6 are 20 and one more is 21.

Another student might say, "I know that 3 sevens is 21."