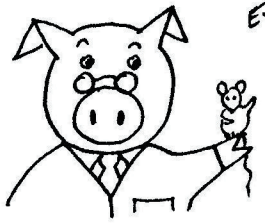
LESSON 5

CONTENTS:

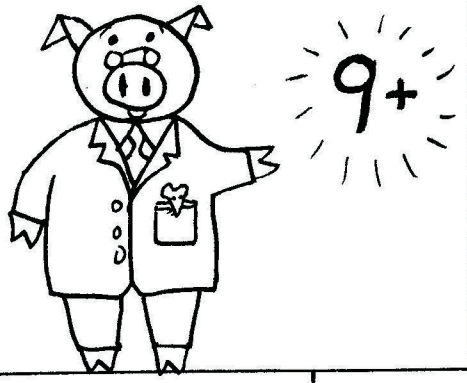
Prof. Pig

EJM

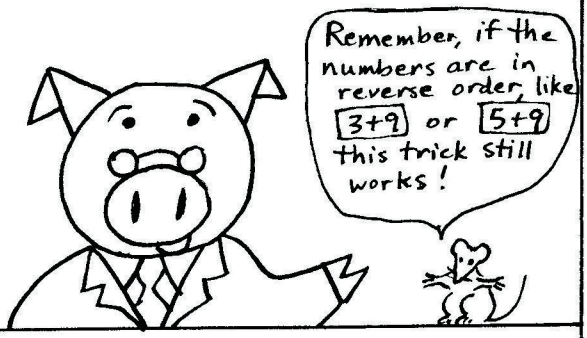


and Memory Mouse

So glad to see you again! You'll love this next math trick - it's so easy!! I call this trick "The 9 plus" trick

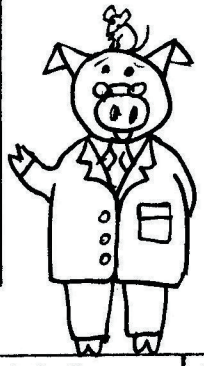


This trick is for problems where you add something to 9. Such as 9+7 or 9+3 or 9+5



Let's take a look at all the "9+" problems: Do see a pattern?

9+1 = 10	9+6 = 15
9+2 = 11	9+7 = 16
9+3 = 12	9+8 = 17
9+4 = 13	9+9 = 18
9+5 = 14	9+10 = 19



Here is the same chart, but with some numbers circled. You will be able to see the pattern, if you didn't before.

9+[1] = 1[0]	9+[6] = 1[5]
9+[2] = 1[1]	9+[7] = 1[6]
9+[3] = 1[2]	9+[8] = 1[7]
9+[4] = 1[3]	9+[9] = 1[8]
9+[5] = 1[4]	9+[10] = 1[9]

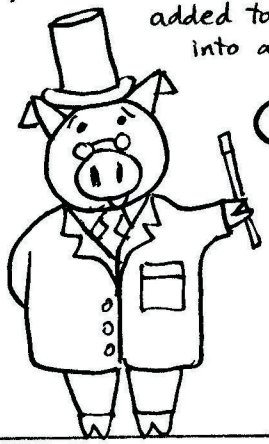
The pattern is that if you subtract 1 from this number you get this number.

9 + (2) = 1(1)

9 + (3) = 1(2)

9 + (4) = 1(3)

So, here's the trick. Take the number that is being added to 9, subtract 1 from it, and make it into a "teen" number by adding a 1 in front of it.



9 + (7) = 1( )

one less than 7 is 6

Now you try a few:

9 + (9) = 1( )

one less than 9

9 + (5) = 1( )

one less than 5

You can use the trick the other way, too.

9 + ( ) = 1(3)

one more than 3

9 + ( ) = 1(7)

one more than 7

So that's it! Now you know the "9 plus" trick. Easy as pie! Piece of cake! (Why are pie and cake easy? I don't know. But speaking of pie and cake, I hear some calling me...)

Why the 9 Trick works

You will need:

- the abacus you made in the last lesson

Let's look at the "9 plus" problems on the abacus. Leave 9 beads on the bottom and push all the others to the top. Now let's do 9+2. Bring down 2 beads. Notice how one of the beads is the same color as the 9 beads. When you figure out the answer to a "9 plus" problem by subtracting 1 from the number you are adding to 9, this is where that one goes. It attaches to the 9 to make 10. Slide the 2 beads back to the top again.

Let's do 9+3. Slide 3 beads down and make them hover for a moment, just above the 9. See how one of the beads is the same color as the 9? Now push the 3 beads down to touch the 9 beads. See how that one color joins the 9 to make 10? Slide the 3 beads back up.

Let's do 9+6. Slide 6 beads down and let them hover above the 9. Look at the 6 beads. The bottom one is the same color as the 9 beads. It will join them in just a second, right? How many will be left in that group of 6? Just 5 now. Go ahead and slide the 6 beads down. Make sure the student sees them as 10+6 now.

Have the student do some similar problems on their own, explaining it back to you as if you were the student.

"Trick and Treats" Game

You will need:

- the dodecahedron die from lesson 3
- one copy of the game board pattern page
- 4 treats of some kind (you may need more treats for more rounds of the game)
- a plastic "sleeve" (page protector) in which to insert the game board (or make some kind of plastic covering so you can write on the game board, then erase with a paper towel)
- a wipe-able marker or crayon of some kind

Put the copy of the game board inside the plastic page protector. Place a treat on top of each one of the circles. The treat can be something edible, but it could also be a coin or some other appropriate reward.

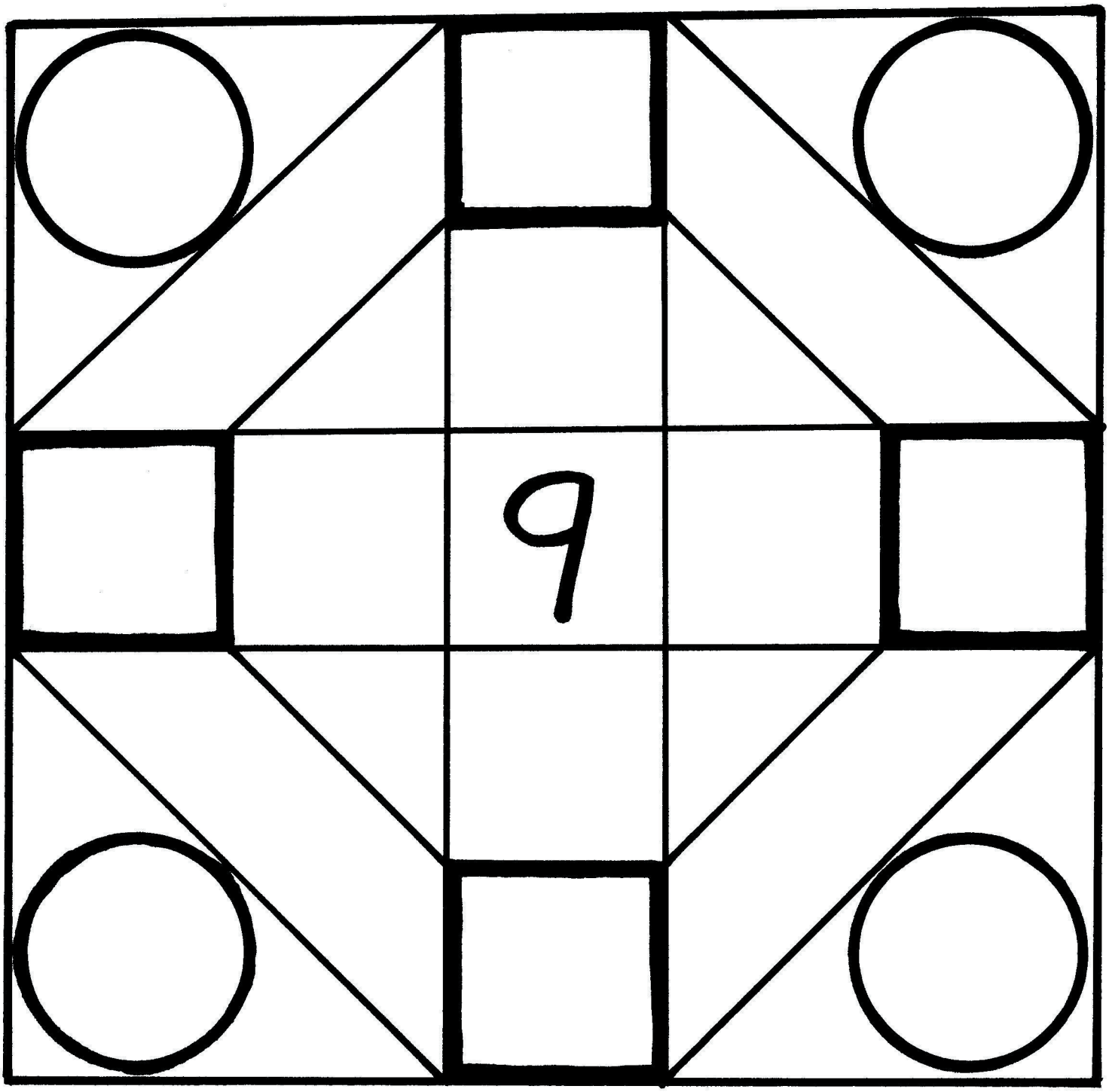
Choose 4 numbers from the list on the game board page. Any 4 numbers will do. Write these numbers down on the game board in the dark squares. Players will then take turns throwing the dodecahedron die. Isn't review great?! If you roll a number than can be added to 9 to make one of the numbers in the dark squares, you may write that number on the middle square, between the 9 and the dark square. For example, if one of the numbers in the dark square is 13 and you roll a 4 ("8+__=12") you may write a 4 in the box between the 9 and 13. If you don't get a number that works, oh well, there's always next time.

The player that completes the X by filling in the last of the 4 middle boxes wins the round and gets to collect one of the treats. Clean off the board and begin again, with 4 new numbers in the dark squares. The game is over when all 4 treats are gone, or when you determine it's time to quit.

Flash cards

Cut apart the flash cards. Cards are read right-to-left like all previous cards. For the first round, do not limit the student's time. They must give the total of the 3 numbers, but they are to add the two numbers on the right first, then add in 9 as a second step. For the second round, give them 3 seconds to study the card, then say the answer from what they remember seeing on the card. Then try to decrease to 2 seconds.

16	15	14	13	12	11
17	18	19	20	10	



921	936	942
927	932	961
922	944	954