## Section 1.4 Homework

1. The following video shows students playing two games: "The Trash Can Game" and "101 and Out" https://www.teachingchannel.org/videos/second-grade-mathlesson. (You will need to join to see it, but you don't have to pay.) How does each game help students understand the value of base ten? How does the teacher use both pair work and whole class work?
2. Draw the number $134_{5}$ using base 5 blocks. Write what it is equal to in base 10. (This is like example 4 in the text).
3. If you wanted to convert the number 78 into base 5 , how many base 5 flats would you need? How many rods? How many units? What base 5 number does this represent? (This is like example 5 in the text, and it is the opposite of the above question.)
4. Explain how you would play Bizz-Buzz in base 4. How would it be different than in base 5? How would it be similar?
5. a. Draw the flats, rods and units for base 4 (hint: think of the powers of 4).
b. Draw the number $321_{4}$ using base 4 blocks (this is like the problem, above, with the base 5 bocks), and say what number this is in base 10. Show your calculations and draw the picture of the blocks.
c. If you wanted to convert the number 58 into base 4 , how many flats would you need? How many rods? How many units? What base 4 number does this represent? Show your calculations and draw the picture of the blocks.
6. Convert $234_{5}$ into base 10 using the base 5 place value columns. You can use blocks if you like, but you do not have to.
7. Convert 71 into base 5 using the base 5 place value columns. You can use blocks if you like, but you do not have to.
8. Convert the following using your own preferred method. Show your work with each problem.
a. Convert 91 into base 6 .
b. Convert $143_{7}$ into base 10 .
c. Convert $10111_{2}$ into base 10 .
d. Convert 51 into binary (base 2 ).
e. Convert $4 \mathrm{E} 8_{12}$ into base $10(\mathrm{E}=11)$.
f. Convert 50 into base 7 .
