Name(s)_____Waruna Saowapark_____ Period _____ Date _____25 Sep 22_____
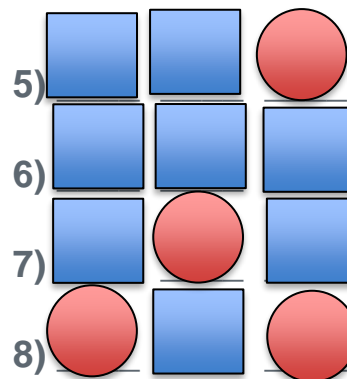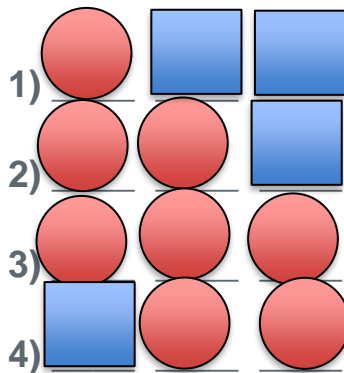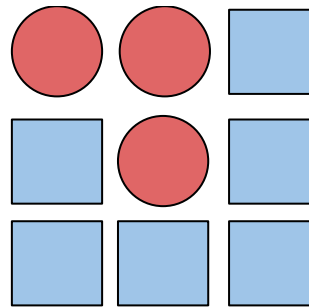
Activity Guide - Circle Square Patterns

Challenge 1: Patterns

Record all of the possible three place value patterns that use only the circle and square shapes. A few are listed in the diagram to the right.

Try to make sure these patterns are in some type of order and avoid putting down patterns randomly

1)

2)

3)

4)

5)

6)

7)

8)

Challenge 2: Describe Your Rules

Reflect on how you put the patterns above in order from one line to the next. Are there any clear rules to follow? If you didn't use any clear rules, re-do Challenge 1 with some rules in mind.
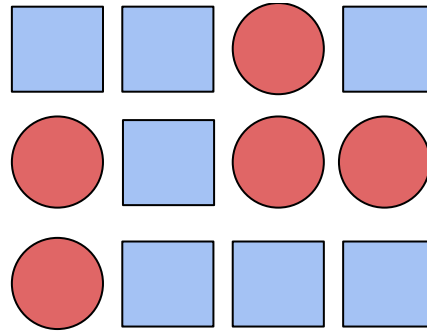
Describe the rules for how you listed your patterns above. Your rules should clearly describe how to create the *exact same* list of patterns.

        The last two are special because I used one of each to place it in the middle and use another type of shape to cover the sides. I arrange this pattern from the smaller amount of each shape from 1-3 for circle and squares and fill the remainder up with another type of shape.

Challenge 3: More Patterns

Use your rules from the last page to try and generate all possible four place value patterns using only circles and squares. Three examples are listed to the right.

You may need to add new rules or slightly change your rules to account for all four place value patterns, but try to keep them as similar as possible.

All Possible Four Place Value Patterns:

1) ●▢▢▢
2) ●●▢▢
3) ●●●▢
4) ●●●●
5) ▢●●●
6) ▢▢●●
7) ▢▢▢●
8) ▢▢▢▢
9) ▢●▢▢
10) ▢▢●▢
11) ●▢●●
12) ●●▢●
13) ▢●●▢
14) ●▢▢●
15) ●▢●▢

16)