

Practical Polygons

Grade Levels: 4-6

Time Suggested: 60 minutes

Materials: 1 computer per 1-2 students

California Content Standards, Mathematics, Grade Five

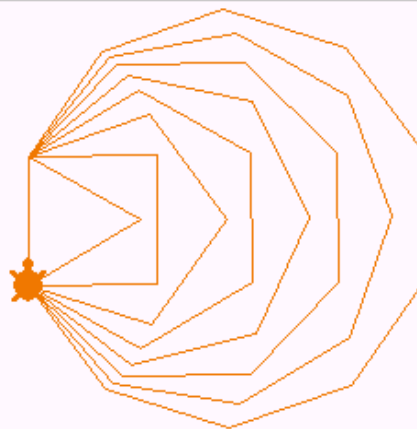
2.0 Students identify, describe, and classify the properties of, and the relationships between, plane and solid geometric figures

Objective: Students will understand how draw and decipher different polygons.

Procedure:

1. Review basic commands with whole class.
 - Right/Left with degrees (rt/lt)
 - Forward with steps (fd)
 - Repeat (repeat #)
2. Review polygons.
 - Triangle
 - Square
 - Pentagon
 - Hexagon
 - Heptagon
 - Octagon
 - Nonagon
 - Decagon
3. Show sample project to class.

```
repeat 3 [fd 70 rt 120]
to square
repeat 4 [fd 70 rt 90]
to pentagon
repeat 5 [fd 70 rt 72]
to hexagon
repeat 6 [fd 70 rt 60]
to heptagon
repeat 7 [fd 70 rt 51.4]
to octagon
repeat 8 [fd 70 rt 45]
to nonagon
repeat 9 [fd 70 rt 40]
to decagon
repeat 10 [fd 70 rt 36]
```



polygons

4. In front of class, demonstrate only **triangle and square** programs in Microworlds.
 - Discuss formula to find pattern: 360° divided by the number of sides (e.g. to make triangle $360^\circ/3 \text{ sides}=120^\circ$)

5. Programs (Here are two sample programs for a triangle and square).

```
To triangle  
repeat 3 [fd 100 rt 120]  
end
```

```
To square  
repeat 4 [fd 100 rt 90]  
end
```

6. Let the students get started. Remind students to add their name to the page using a text box. They can also copy and paste the programs into a text box for printing.