Polygon Patterns

Go to <https://www.geogebra.org/m/we6ww7cz> and follow the provided directions. In the tables below, collect data about different polygons and their exterior angles by answering the corresponding questions.

# Math Data

| Polygon Type: Triangle | | |  | Polygon Type: Quadrilateral | | |
| --- | --- | --- | --- | --- | --- | --- |
| How many exterior angles are there? | What shape do all the exterior angles combine to make? | What is the angle measure of that shape? |  | How many exterior angles are there? | What shape do all the exterior angles combine to make? | What is the angle measure of that shape? |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Polygon Type: Pentagon | | |  | Polygon Type: Hexagon | | |
| How many exterior angles are there? | What shape do all the exterior angles combine to make? | What is the angle measure of that shape? |  | How many exterior angles are there? | What shape do all the exterior angles combine to make? | What is the angle measure of that shape? |
|  |  |  |  |  |  |  |

# Reflection and Conclusions

1. Based on what you saw in the GeoGebra activity, what do you think the definition of an exterior angle is?
2. How are exterior angles constructed?
3. For any polygon, what is the connection between the number of sides it has and the number of exterior angles it has?
4. What is the relationship between corresponding interior and exterior angles?
5. What is the relationship between the number of sides a polygon has and the sum of its exterior angles? How does this differ from the sum of the interior angles of a polygon?