Exterior Angles of a Triangle
GGB demo lab: _____ Jan _____, 2014

PART I.   Show ONE PAIR of exterior and interior angles at one vertex.
1) What is the relationship between any one pair of interior and exterior angles of a triangle?
2) What are TWO different geometric names that can be applied to this pair of angles?

PART II.   Show all EXTERIOR ANGLE measures.
Drag vertex points A, B, or C to explore and answer the questions.
3) What type of triangle is Δ ABC when all exterior angles are obtuse?
4) Drag a vertex so that one exterior angle is acute. What type of triangle is Δ ABC now?
5) Is it possible to have two or all three exterior angles be acute? Why?

PART III.   Show the EXTERIOR angle at ∠A and the INTERIOR angles at ∠B and ∠C.
6) What is the relationship between the two interior angles that are showing and the one interior angle at ∠A that is NOT showing?
7) What is the relationship between the one exterior angle that is showing and the one interior angle that is NOT showing?
8) What is the relationship between the two interior angles that are showing and the one exterior angle that is showing?

Do your conclusions hold true for the other vertices?
Repeat questions 6-7-8 for the exterior angle at ∠B and interior angles at ∠A & ∠C.
Repeat questions 6-7-8 for the exterior angle at ∠C and interior angles at ∠A & ∠B.