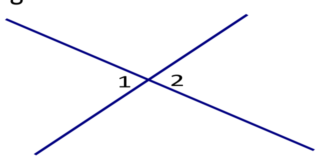
TARGET 2A: UNDERSTANDING INDUCTIVE REASONING

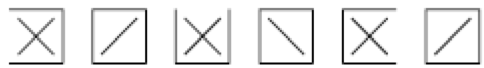
I can …	Sample Question	Evidence of Understanding	**What level is your understanding?** 4=complete, 3=substantial 2=developing, 1=minimal
1. I can identify inductive reasoning	• In your own words, explain what inductive reasoning is. • For which of the following situations is inductive reasoning used to draw a conclusion? a) If $\frac{x-1}{2}=8$, then x – 1 = 16. b) If $\angle A = 120^\circ$ and $\angle B = 60^\circ$, then $\angle A$ *and* $\angle B$ are supplementary. c) By the Vertical Angle Theorem, $m\angle 1 = m\angle 2$ in the figure below.  d) Cara measures the acute angles in several right triangles. She concludes that the two acute angles always add up to 90°. Therefore, the two acute angles in a right triangle are complementary.		

Revised 9-15-11

Target 2a: Understanding Inductive Reasoning

2. I can make conjectures based on observations.

a. What are the next three items in the pattern?



b. What are the next three numbers in the Fibonacci sequence below?

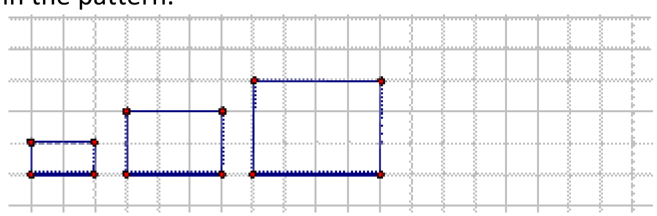
1, 1, 2, 3, 5, 8,…

c. Kaitlyn observes the number of quail in her backyard over the course of several nights.

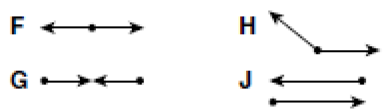
Night	1	2	3	4
# of quail	20	17	14	19

Using inductive reasoning, make a conjecture for the given data.

d. Write a rule to find the perimeter of the 100^{th} rectangle in the pattern.



Target 2a: Understanding Inductive Reasoning

3. I can use a counterexample to show a conjecture is false	a. Which is the counterexample that proves the given conjecture is false? Conjecture: "If two rays have the same endpoint, then they are opposite rays." Counterexamples:  b. Show that the conjecture is false by finding a counterexample. If *AB* + *BC* = *AC*, then *B* is the midpoint of *AC*. c. Which is NOT a counterexample for the conditional statement "If x ≠ 0, then $\frac{1}{x} < x$"? a) -2 b) ½ c) -1 d) 2		