

## ACTIVITY 1.1

### Smartphones and Tablet Computers

#### Introduction

1. Imagine you are a citizen of a country called Technologia, which produces only two goods: smartphones and tablet computers. You will be participating in a simulation that will produce the production possibilities frontier (PPF) for these two goods. What do these two goods have in common?
2. One resource needed to produce both smartphones and tablet computers is the rare earth mineral coltan, a heat-resistant ore that can hold a strong electrical charge. It is used in making the capacitors needed to produce the touch screens in both smartphones and tablet computers. Coltan is rare and almost all the deposits are in African countries such as the Democratic Republic of Congo.

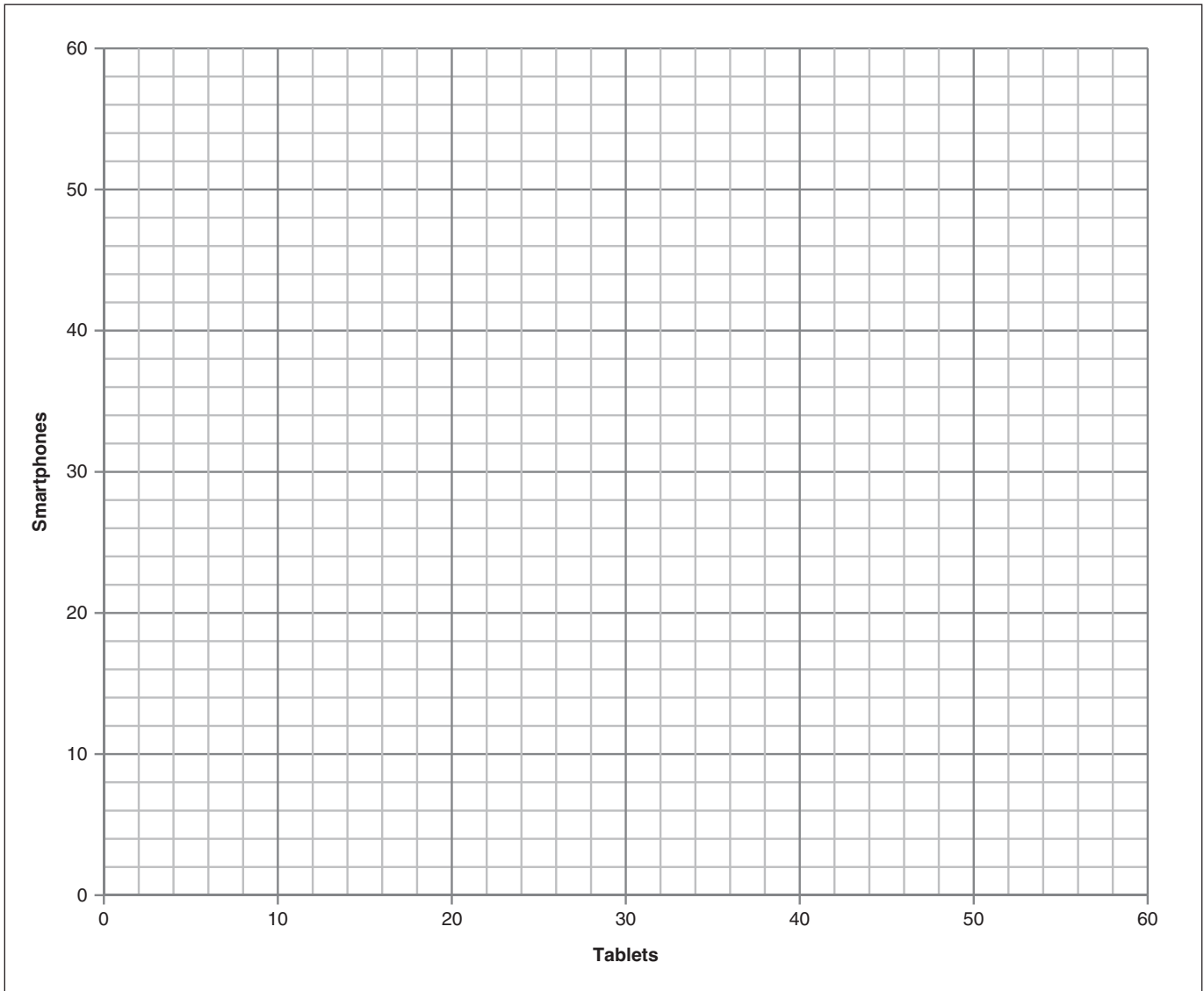
#### PPF for Technologia

3. Three boxes will be used in this simulation: “coltan,” “smartphones,” and “tablet computers.” The coltan box will contain a number of cards, each with a smartphone on one side and a tablet computer on the other. Ten students will be selected to simulate production of either smartphones or tablet computers. Those students will be making decisions about how to use coltan resources. Once the round begins, students will produce as many of each good as possible. Goods are produced by turning each coltan card to the appropriate good and passing the card to the next person in line until it is placed in the appropriate box. Students can only handle one card at a time. The team with the most goods in their box at the end of the round will be declared the winners.
4. After each round, enter your results into Table 1.1 and plot on the blank axes provided.

**Table 1.1: Smartphone and Tablet Computer Production Possibilities**

Round (point)	Number of Smartphones	Number of Tablet Computers
1 (A)		
2 (B)		
3 (C)		
4 (D)		
5 (E)		
6 (F)		

## Smartphones and Tablet Computers



## ACTIVITY 1.2

### Smartphone and Tablet Computer Cards

Smartphones



## ACTIVITY 1.2 (Continued)

### Smartphone and Tablet Computer Cards

Tablet Computers

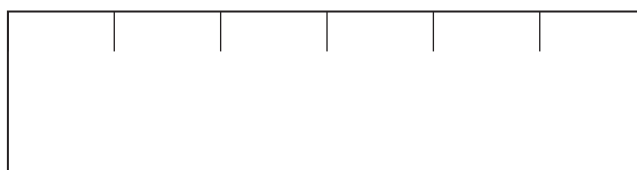


## ACTIVITY 1.3

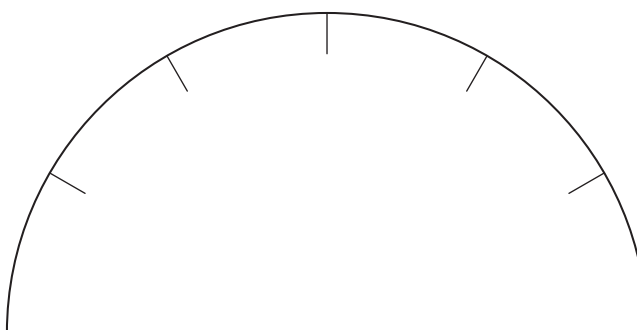
### Rulers and Protractors

Often when countries or individuals choose between combinations of two goods, the resources needed to produce one good are different from those needed to produce the other good. You will be participating in the simulation of the production of two goods: rulers and protractors. Rulers are produced using 3.5-inch  $\times$  1-inch strips of paper that you will cut from the Rulers and Protractors Sheet. A ruler is produced by making five vertical marks (see example below, not actual size). Protractors are produced by using scissors to cut a semicircle from a 3.5-inch  $\times$  2-inch rectangle and drawing five marks around the edge of the semicircle (see example below, not actual size).

#### Ruler Example



#### Protractor Example



Before the simulation begins, use scissors to cut along the lines of Activity 1.4. Once completed, you should have 16 strips and 16 rectangles.

For each round, begin with four strips, four rectangles, a pen, a roll of tape, and a pair of scissors. Resources may not be carried over from one period to the next, and only one sheet of paper may be cut at a time. You may tape together ruler strips to make protractors.

In each round, you will have 90 seconds of production time. At the end of each round, you will plot results in Table 1.2 below.

Round 1: Make four protractors and as many rulers as you can.

Round 2: Make only rulers.

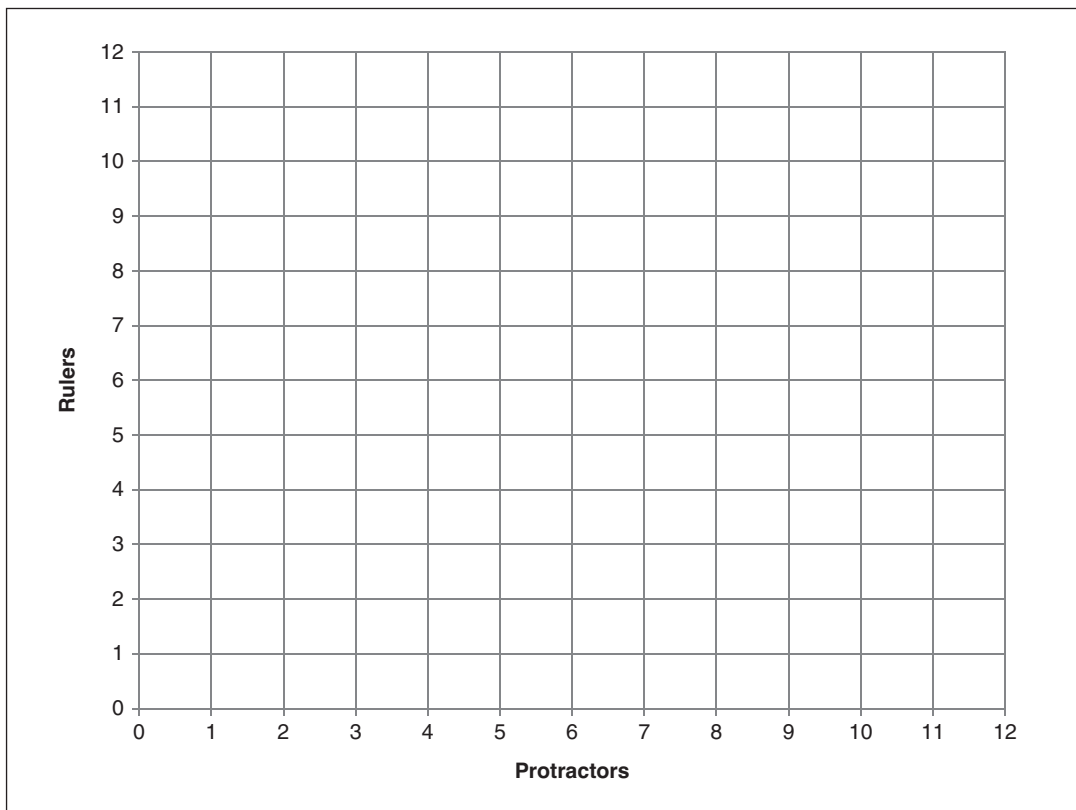
Round 3: Make only protractors.

Round 4: Make one protractor and as many rulers as you can.

Record the number of rulers and protractors produced in each round in Table 1.2. Careful! The rounds are not in sequential order. Once Table 1.2 is complete, plot these points on the blank axes that follows.

**Table 1.2**

Point	Round	Rulers	Protractors
<b>A</b>	<b>Round 2</b>		0
<b>B</b>	<b>Round 4</b>		1
<b>C</b>	<b>Round 1</b>		
<b>D</b>	<b>Round 3</b>	0	



## Opportunity Cost

To an economist, the true cost of anything is more than the monetary price (the “price tag”) of the good or service. Economists focus on the true cost as the opportunity cost. The opportunity cost is the cost of the next best choice, or what we give up to get what we want. In the case of protractors and rulers, when we choose to produce some protractors, we must give up the opportunity to produce some rulers.

1. What was the opportunity cost of the first protractor (from point A to B)?

2. What was the opportunity cost of the last protractor (from point C to D)?

\_\_\_\_\_ rulers were given up for \_\_\_\_\_ protractors OR

\_\_\_\_\_ rulers per protractor

3. Why did the opportunity cost increase?

4. How does this relate to real-world production possibilities?

## ACTIVITY 1.4

### Rulers and Protractors

#### Rulers




## ACTIVITY 1.4 (Continued)

### Rulers and Protractors

#### Protractors
