

# Public Service Announcement – Non-excludable, Non-rival Goods

**SUBMITTED BY:** Michael Ryan Moore, University of Pennsylvania, GSE

**SUBJECT(S):** Economics

**GRADE LEVEL(S):** 9, 10, 11, 12

## ≡ OVERVIEW:

During this lesson, students will learn about public and private goods. First, students are introduced to the economic terms rivalry and excludability. Next, students will think about public goods through the Wharton Global Youth Program article: “The Voice of A Green Generation.” Finally, students will think about the implications of putting a price on public and private goods.

## ≡ NBEA STANDARD(S):

- Economics, II. Economic Systems
- Economics, VI. Productivity

## ≡ RELATED ARTICLES:

- [“The Voice of a Green Generation”](#)
- [“Biotech Innovation That Breaks Down Plastic and Feeds the Fish”](#)

**Objectives/Purposes:** The purpose of this lesson is for students to understand *public goods* and distinguish them from other goods.

- Students will be able to define *rivalry* and *excludability* from an economic perspective.

- Students will be able distinguish *public goods* as *non-rival* and *non-excludable*.
- Students will understand how *public goods* differ from *private goods*.

### Other Resources/Materials:

- Internet Access (Outside of the Classroom)
- Printer/Copier
- Access to Chalkboard/Whiteboard
- Butcher Paper
- Markers

### Activity:

The lesson is divided into four parts: (1) Introduction, (2) Exploration Activity, (3) Guided Reading, and (4) Closing.

#### 1. Introduction: (10-15 mins)

Open this lesson by asking students to define the term *public good*. There is no right or wrong answer for this activity. Instead, the goal is to get students thinking about the term “public,” and what it might mean in an economic sense. In order to prompt discussion, feel free to ask some leading questions. For example: “Do you think your shirt/shoes/etc. is a public good?” “Why not?” Use the students’ answers to lead them to a definition of public goods. (For example, if a student says, “No, my shirt isn’t a public good because it’s mine,” the teacher can press the issue. “Well then, what about another student’s shirt?”) Push students to be clear about ownership.

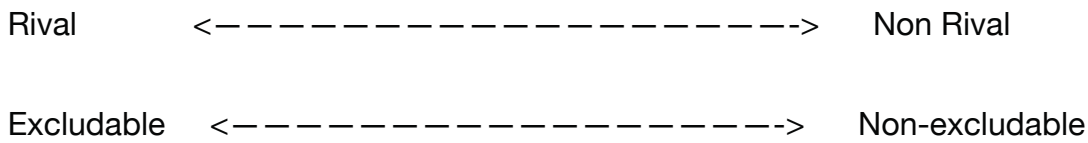
After this short introduction, tell students that we want to work towards a concrete definition of *public goods*, so we can know, without any doubts, what goods are public and what are not.

But before we can get to a definition of *public good*, we need to start with two other terms.

The first term is *rivalry*. In economics, we think of products as “rival” or “non-rival.” Something is rival when one person using it prevents another person from using it. Ask students to think of an example of a rival good and a non-rival good. (For example, almost any food item is a rival good. Once someone swallows their food, others are prevented from consuming it. On the other hand, music is less rival. Multiple people can listen to it at the same time.)

The second term is *excludable*. In economics, products can be “excludable” or “non-excludable.” A good is excludable when you can prevent people who haven’t paid for it from using it. Ask students to think of examples of excludable and non-excludable goods. For example, a lighthouse is a good example of a non-excludable good.

Both of these terms exist on a continuum. To emphasize this point, draw two lines on the board (see below):



2. *Exploration Activity: (15-20 mins)*

Break students into groups of three to four students. Provide each group with a sheet of butcher paper and a marker.

For this exercise, each group must come up with five or six items on a scale from *most* rival to *least* rival. (For example, a mint is more rival than a cake. A cake is more rival than a book.) These items do not have to be related. Give students 5-8 minutes to work. After time is up, have each group share their lists.

Next, give each group another 5-8 minutes. This time, each group must come up with 5 to 6 items on a scale from *most* excludable to *least* excludable. (For example, a park is more excludable than a forest. A forest is more excludable than air.) After time is up, have each group share their lists.

After this second round, introduce students to the formal definition of a *public good*. A public good is both non-rival and non-excludable. Give each group about 5 minutes to make a list of as many public goods as they can, using this new definition. Once time is up, have groups report back to the class.

3. *Guided Reading: (5-10 mins)*

Next, as students read through the article: “The Voice of A Green Generation,” encourage them to think about the environment as a public good. How does it fit the definition? How does it not? Once students have finished reading, encourage students to briefly summarize the article. Ask for volunteers to share their answers to the guiding questions above.

#### 4. Closing: (1-5 mins)

With the remaining time, ask students to think about the consequences of public goods. A good thought experiment involves the presence of a police station in a neighborhood. Safety can be thought of as a public good. Even if I don't pay taxes, I benefit from the police who patrol my neighborhood. Again, depending on time, this can open a robust discussion about *free riders* and *externalities* (which segues into the next lesson in this unit).

#### **Tying It All Together:**

##### *Assessment & Extension*

The group activity can be used to assess students' understanding of rivalry and excludability. It is extremely important for students to understand that both terms exist on a continuum. When students think in black-and-white terms, the concepts become much more difficult to understand — primarily because few goods are perfectly rival or perfectly excludable.

**Practice Outside of the Classroom:** Ask the students to look for examples of non-excludable and non-rival goods in their own neighborhoods. Are there any truly “public” goods? If so, who provides them? This can spur a constructive discussion about the difference between private interests and the role of government.

**What Worked and What I Would Do Differently:** In all my classes, students were quick to point out exceptions to the rule. For example, if one student suggested that a phone booth was non-rival, another student would point out that only one person could use it at a time. If another student suggested that a park was non-excludable, a second student would point out that you can place a fence in a park.

Instead of dismissing these dissenting opinions, use them to emphasize that rival and excludable exist on a continuum. Moreover, encourage students to realize that we can take steps to make non-rival goods *more* rival. Similarly, we can take steps to make non-excludable goods *more excludable*.