

Acceptable Risk Considerations

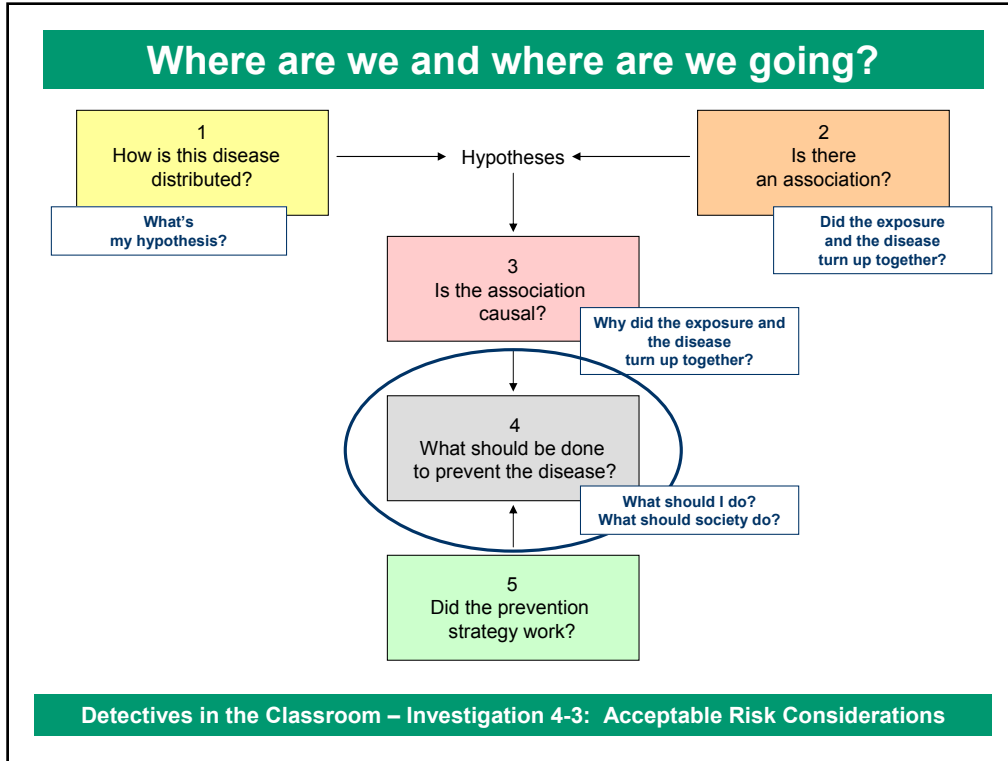


Acceptable Risk Considerations

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

In **Investigation 4-3: Acceptable Risk Considerations**, students will apply the acceptable risk considerations suggested by themselves and others to specific risks and realize how these considerations can help develop risk management strategies.

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Remind students again that in the Module 4 investigations, they are learning how to answer the Fourth Essential Question: “What should be done to prevent the disease?”

Next Slide

Review

Epi Talk

Risk

A measure of how often an event occurs in a defined group of people in a defined period of time.

The likelihood of developing a disease.

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Review the definition of “Risk.”

Next Slide

Review

Epi Talk

Risk Perception

One's feeling or opinion of the existence or size of a risk.

One's estimate of the likelihood that an undesirable consequence, associated with some activity, will occur within a period of time.

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Review the definition of “Risk Perception.”

Next Slide

Review

Epi Talk

Acceptable Risk

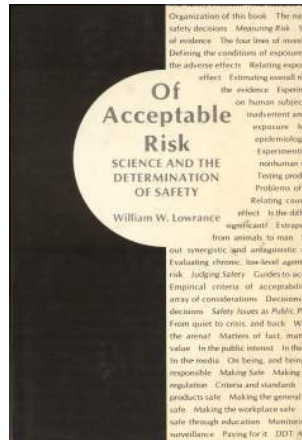
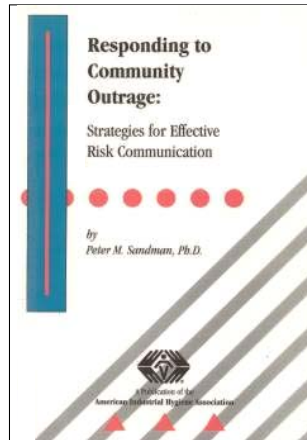
The degree to which an individual or society is willing to tolerate the existence of something that poses a danger.

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Review the definition of “Acceptable Risk.”

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Acceptable Risk Considerations



Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

In the previous class, students made lists of acceptable risk considerations, including reasons why risks are and are not acceptable.

Other people have suggested *acceptable risk considerations* as well. The slide shows two examples of published books that contain such lists. The class will review eight acceptable risk considerations proposed by others.

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Acceptable Risk Considerations

1. Is the risk assumed voluntarily or involuntarily?

**Most
Acceptable**

**Risk assumed
voluntarily**

Examples

← **Continuum** →

**Least
Acceptable**

**Risk assumed
involuntarily**

Examples

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

It is helpful to think about each of these considerations on a continuum, from most to least acceptable. (*Continuum*: A continuous extent or whole, no part of which can be distinguished from neighboring parts except by arbitrary division. *The American Heritage Dictionary*, 4th Edition, 2001.)

Show students the first consideration: Is the risk assumed voluntarily or involuntarily?

Ask students:

- Where do risks that are assumed *voluntarily* belong on the continuum—at the end that is most or least acceptable? (Most acceptable)
- Can you identify examples of risks that people assume *voluntarily*? (Examples: cigarette smoking or driving over the speed limit)
- Where do risks that are assumed *involuntarily* belong on the continuum—at the end that is most or least acceptable? (Least acceptable)
- Can you identify examples of risks that people assume *involuntarily*? (Examples: toxic emissions from a neighborhood industry, secondhand cigarette smoke)

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Acceptable Risk Considerations

Detectives in the Classroom
Investigation 4-3: Epi Log Worksheet

Name: _____
Date: ____/____/____

Acceptable Risk Considerations

1. _____ Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div></div> <p style="text-align: center;">Examples</p> <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div></div>	2. _____ Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div></div> <p style="text-align: center;">Examples</p> <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div></div>
3. _____ Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div></div> <p style="text-align: center;">Examples</p> <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div></div>	4. _____ Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div></div> <p style="text-align: center;">Examples</p> <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div><div style="border: 1px solid black; width: 80px; height: 60px; margin: 5px;"></div></div>

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Give each student an **Investigation 4-3: Epi Log Worksheet**.

Tell students to insert the appropriate information for the first acceptable risk consideration into Section 1 of the worksheet by writing the risk consideration at the top and filling in the boxes for “Most Acceptable” and “Least Acceptable” along with examples of each.

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Acceptable Risk Considerations

2. Are there less risky alternatives?

Most Acceptable ← **Continuum** → **Least Acceptable**

<p style="color: red; font-weight: bold; margin: 0;">No less risky alternatives</p>	<p style="color: red; font-weight: bold; margin: 0;">Other less risky alternatives</p>
Examples	Examples

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Show students the second consideration: Are there less risky alternatives?

Ask students:

- Where do risks that *do not have any less risky alternatives* belong on the continuum—at the end that is most or least acceptable? (Most acceptable)
- Can you identify examples of risks that people assume by doing something for which there is *no other way to accomplish the same thing?* (Example: traffic)
- Where do risks that have *one or more less risky alternatives* belong on the continuum—at the end that is most or least acceptable? (Least acceptable)
- Can you identify examples of risks that people assume by doing something for which there is *one or more less risky alternatives?* (Example: unsafe toys)

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Acceptable Risk Considerations

Detectives in the Classroom
Investigation 4-3: Epi Log Worksheet

Name: _____
Date: ____/____/____

Acceptable Risk Considerations

1. Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 80px;"></div><div style="border: 1px solid black; width: 80px; height: 80px;"></div></div> Examples <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 40px;"></div><div style="border: 1px solid black; width: 80px; height: 40px;"></div></div>	2. Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 80px;"></div><div style="border: 1px solid black; width: 80px; height: 80px;"></div></div> Examples <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 40px;"></div><div style="border: 1px solid black; width: 80px; height: 40px;"></div></div>
3. Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 80px;"></div><div style="border: 1px solid black; width: 80px; height: 80px;"></div></div> Examples <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 40px;"></div><div style="border: 1px solid black; width: 80px; height: 40px;"></div></div>	4. Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 80px;"></div><div style="border: 1px solid black; width: 80px; height: 80px;"></div></div> Examples <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 40px;"></div><div style="border: 1px solid black; width: 80px; height: 40px;"></div></div>

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Tell students to insert the appropriate information for the second acceptable risk consideration into Section 2 of the worksheet.

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Acceptable Risk Considerations

3. Is the risk from something that occurs naturally or is it from something that is man-made?

Most Acceptable ← **Continuum** → **Least Acceptable**

<p style="color: red; font-weight: bold; font-size: 1.2em;">Occurs naturally</p>	<p style="color: red; font-weight: bold; font-size: 1.2em;">Is man-made</p>
Examples	Examples

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Show students the third consideration: Is the risk from something that occurs naturally or is it from something that is man-made?

Ask students:

- Where the risks that are associated with an event that *occurs naturally* belong on the continuum—at the end that is most or least acceptable? (Most acceptable)
- Can you identify examples of risks that *occur naturally*? (Example: earthquake)
- Where do the risks that are associated with something that *is man-made* belong on the continuum—at the end that is most or least acceptable? (Least acceptable)
- Can you identify examples of risks that are associated with something that *is man-made*? (Examples: terrorist attack, chemicals)

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Acceptable Risk Considerations

Detectives in the Classroom
Investigation 4-3: Epi Log Worksheet

Name: _____
Date: ____/____/____

Acceptable Risk Considerations

1. _____ Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px;"></div><div style="border: 1px solid black; width: 80px; height: 60px;"></div></div> <p style="text-align: center;">Examples</p> <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px;"></div><div style="border: 1px solid black; width: 80px; height: 60px;"></div></div>	2. _____ Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px;"></div><div style="border: 1px solid black; width: 80px; height: 60px;"></div></div> <p style="text-align: center;">Examples</p> <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px;"></div><div style="border: 1px solid black; width: 80px; height: 60px;"></div></div>
3. _____ Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px;"></div><div style="border: 1px solid black; width: 80px; height: 60px;"></div></div> <p style="text-align: center;">Examples</p> <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px;"></div><div style="border: 1px solid black; width: 80px; height: 60px;"></div></div>	4. _____ Most Acceptable ← → Least Acceptable <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px;"></div><div style="border: 1px solid black; width: 80px; height: 60px;"></div></div> <p style="text-align: center;">Examples</p> <div style="display: flex; justify-content: space-around;"><div style="border: 1px solid black; width: 80px; height: 60px;"></div><div style="border: 1px solid black; width: 80px; height: 60px;"></div></div>

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Tell students to insert the appropriate information for the third acceptable risk consideration into Section 3 of the worksheet.

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Acceptable Risk Considerations

4. Is the risk known with certainty or are we unsure that there is a risk?

Most Acceptable

Not sure

Examples

← **Continuum** →

Least Acceptable

Certain

Examples

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Show students the fourth consideration: Is the risk known with certainty or are we unsure that there is a risk?

Ask students:

- Where do the risks that are *not known with certainty* belong on the continuum—at the end that is most or least acceptable? (Most acceptable)
- Can you identify examples of risks that are *not known with certainty*? (Examples: cellular telephones, heavy backpacks)
- Where do the risks that are *known with certainty* belong on the continuum—at the end that is most or least acceptable? (Least acceptable)
- Can you identify examples of risks that are *known with certainty*? (Examples: drunk driving; smoking and lung cancer)

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Acceptable Risk Considerations

Detectives in the Classroom
Investigation 4-3: Epi Log Worksheet

Name: _____
Date: ____/____/____

Acceptable Risk Considerations

1. Most Acceptable ← → Least Acceptable Examples Examples	2. Most Acceptable ← → Least Acceptable Examples Examples
3. Most Acceptable ← → Least Acceptable Examples Examples	4. Most Acceptable ← → Least Acceptable Examples Examples

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Tell students to insert the appropriate information for the fourth acceptable risk consideration into Section 4 of the worksheet.

Next Slide

Acceptable Risk Considerations

5. Is the risk catastrophic or is it similar to those we assume everyday?

Most Acceptable ← Continuum → **Least Acceptable**

<p style="color: red; font-weight: bold; font-size: 1.2em;">Everyday</p>	<p style="color: red; font-weight: bold; font-size: 1.2em;">Catastrophic</p>
Examples	Examples

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Show students the fifth consideration: Is the risk catastrophic or is it similar to those we assume everyday?

Ask students:

- Where do risks that are *similar to those we assume everyday* belong on the continuum—at the end that is most or least acceptable? (Most acceptable)
- Can you identify examples of risks that are *similar to those we assume everyday*? (Examples: automobile crash, skin rash)
- Where do risks that are *catastrophic* belong on the continuum—at the end that is most or least acceptable? (Least acceptable)
- Can you identify examples of risks that are *catastrophic*? (Examples: airplane crash, cancer)

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Acceptable Risk Considerations

5. Most Acceptable ← → Least Acceptable Examples Examples	6. Most Acceptable ← → Least Acceptable Examples Examples
7. Most Acceptable ← → Least Acceptable Examples Examples	8. Most Acceptable ← → Least Acceptable Examples Examples

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Tell students to insert the appropriate information for the fifth acceptable risk consideration into Section 5 of the worksheet.

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Acceptable Risk Considerations

6. Is the risk posed by something that is likely to be used as intended or is it likely to be misused?

Most Acceptable ← **Continuum** → **Least Acceptable**

<p style="color: red; font-weight: bold; font-size: 1.2em;">Used as intended</p>	<p style="color: red; font-weight: bold; font-size: 1.2em;">Misused</p>
Examples	Examples

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Show students the sixth consideration: Is the risk posed by something that is likely to be used as intended or is it likely to be misused?

Ask students:

- Where do risks that are caused by something that is likely to be *used as intended* belong on the continuum—at the end that is most or least acceptable? (Most acceptable)
- Can you identify examples of risks caused by something that is likely to be *used as intended*? (Examples: stove top, microwave)
- Where do risks that are caused by something that is likely to be *misused* belong on the continuum—at the end that is most or least acceptable? (Least acceptable)
- Can you identify examples of risks that are caused by something that is likely to be *misused*? (Example: handguns)

Next Slide

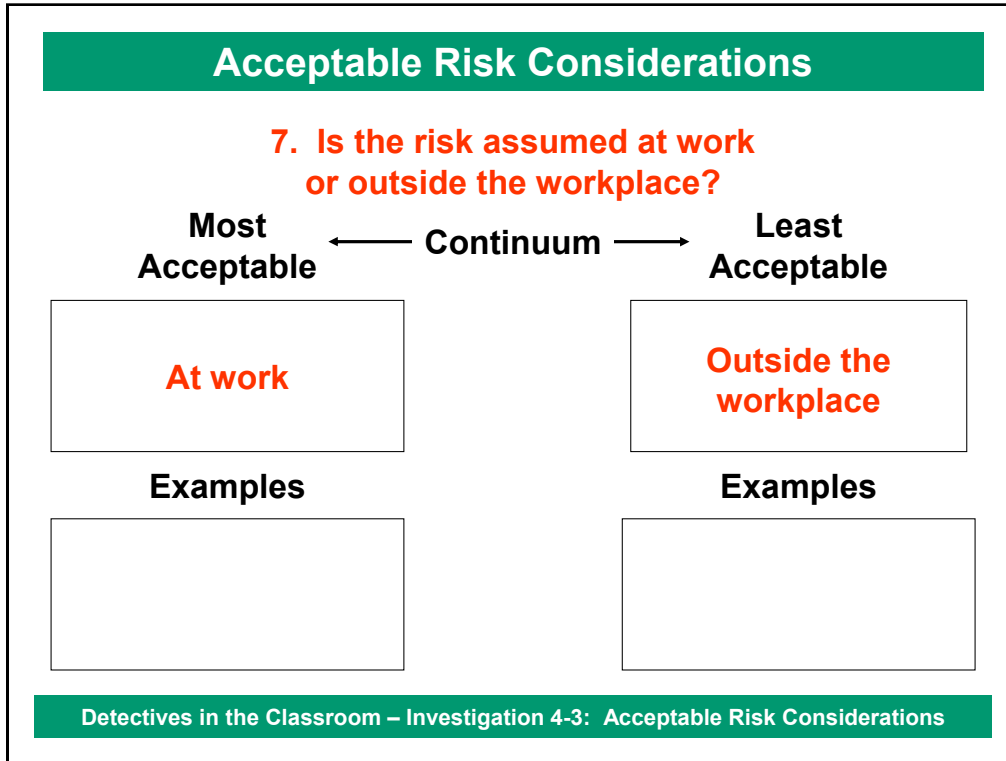
Acceptable Risk Considerations

5.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	
6.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	
7.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	
8.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Tell students to insert the appropriate information for the sixth acceptable risk consideration into Section 6 of the worksheet.

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Show students the seventh consideration: Is the risk assumed at work or outside the workplace?

Ask students:

- Where do risks that occur *at work* belong on the continuum—at the end that is most or least acceptable? (Most acceptable)
- Can you identify examples of risks that are assumed *at work*? (Examples: air quality in a factory, exposure to chemicals in a chemical plant)
- Where do risks that occur *outside the workplace* belong on the continuum—at the end that is most or least acceptable? (Least acceptable)
- Can you identify examples of risks that are assumed *outside the workplace*? (Examples: community air pollution, chemicals in water supply)

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Acceptable Risk Considerations

5.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	
6.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	
7.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	
8.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Tell students to insert the appropriate information for the seventh acceptable risk consideration into Section 7 of the worksheet.

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Acceptable Risk Considerations

8. Is the risk distributed fairly or unfairly?

**Most
Acceptable**

Distributed
fairly

Examples

← **Continuum** →

**Least
Acceptable**

Distributed
unfairly

Examples

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Show students the eighth consideration: Is the risk distributed fairly or unfairly?

Ask students:

- Where do risks that are *distributed fairly* belong on the continuum—at the end that is most or least acceptable? (Most acceptable)
- Can you identify examples of risks that are *distributed fairly*? (A fairly distributed risk is one in which the person exposed to the risk is also receiving the benefit of the activity. Example: skateboarders spraining or fracturing their wrist)
- Where do risks that are *distributed unfairly* belong on the continuum—at the end that is most or least acceptable? (Least acceptable)
- Can you identify examples of risks that are *distributed unfairly*? (Example: people living in the neighborhood around a polluting factory versus the company owner, who does not live in that neighborhood)

☀ **Teacher Alert:** Students may need more help with this consideration. Explain that fair distribution of risk occurs when the people who take the risk also get the benefit. An example is traveling on commercial airline flights. Unfair distribution occurs when risks are incurred by some, whereas many others receive the benefit without the risk. An example is a nuclear power plant, which may be a risk to people living nearby yet may benefit a far wider population that does not live near the plant.

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Acceptable Risk Considerations

5.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	
6.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	
7.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	
8.	Most Acceptable ← → Least Acceptable		
	Examples	Examples	

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Tell students to insert the appropriate information for the eighth acceptable risk consideration into Section 8 of the worksheet.

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Epi Log Worksheet 2

Detectives in the Classroom Name: _____	
Investigation 4-2: Epi Log Worksheet 2 Date: ___/___/___	
Acceptable Risk Considerations	
Reasons Risks Are Acceptable	Reasons Risks Are Not Acceptable
1. Only affects person taking the risk	1. Also affects others
2. Harm does not happen immediately	2. Harm is very serious
3. XXXXXXXXXXXXXXXXXXXX	3. XXXXXXXXXXXXXXXXXXXX
4. XXXXXXXXXXXXXXXXXXXX	4. XXXXXXXXXXXXXXXXXXXX
5. XXXXXXXXXXXXX	5. XXXXXXXXXXXXXXXXXXXXXXXX
6. XXXXXXXXXXXXXXXXXXXXXXXX	6. XXXXXXXXXXXXXXXX
7. XXXXXXXXXXXXXXXX	7. XXXXXXXXXXXXXXXXXXXX
8. XXXXXXXXXXXXXXXXXXXX	8. XXXXXXXXXXXXXXXXXXXXXXXX
9. XXXXXXXXXXXXX	9. XXXXXXXXXXXXXXXXXXXXXXXX
10. XXXXXXXXXXXXXXXXXXXX	10. XXXXXXXXXXXXX
11. XXXXXXXXXXXXXXXXXXXXXXXX	11. XXXXXXXXXXXXXXXXXXXXXXXX
12. XXXXXXXXXXXXXXXX	12. XXXXXXXXXXXXXXXXXXXX

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Students should now take out **Investigation 4-2: Epi Log Worksheet 2**.

Ask students:

- Did you write down any considerations that were not among the eight just discussed?

☀ Teacher Alert: It is possible that students find that all of their considerations have found a place among these eight.

Next Slide

Acceptable Risk Considerations

9. _____

Most Acceptable ← **Continuum** → **Least Acceptable**

Examples	Examples

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

If additional considerations have been suggested by the students, lead a critique of each in a manner similar to what was done for the first eight.

Ask students:

- What characteristics of this consideration would make a risk most acceptable?
- Can you identify examples of risks that have this characteristic?
- What characteristics of this consideration would make a risk least acceptable?
- Can you identify examples of risks that have this characteristic?

Next Slide

Acceptable Risk Considerations

9. Most Acceptable ← → Least Acceptable Examples Examples	10. Most Acceptable ← → Least Acceptable Examples Examples
11. Most Acceptable ← → Least Acceptable Examples Examples	12. Most Acceptable ← → Least Acceptable Examples Examples


Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

Tell students to insert the appropriate information for the ninth acceptable risk consideration into Section 9 of the **Investigation 4-3: Epi Log Worksheet**.

☀ Teacher Alert: Continue the above process until all considerations suggested by students have been critiqued.

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Acceptable Risk Considerations



Is this risk acceptable or unacceptable?

Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

The illustration shows a person with dark skin and curly hair, wearing a yellow shirt with the letters 'CML' on it. They are sitting at a desk, looking down at a document with a grid of 'x' marks. A thought bubble above their head contains the text 'Is this risk acceptable or unacceptable?'. The entire scene is framed by a green header and footer.

Ask students:

- How might people's judgments of the acceptability of risks influence the development of disease prevention strategies?

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Acceptable Risk Considerations



Detectives in the Classroom – Investigation 4-3: Acceptable Risk Considerations

This concludes **Investigation 4-3: Acceptable Risk Considerations** and students can now put away their **Epi Logs**.