

What's My Hypothesis?

**What's My
Hypothesis?**

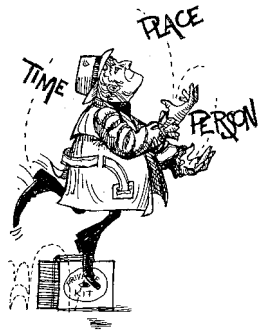
Whistles

Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Tell students that by completing **Investigation 1-3: What's My Hypothesis?** they will learn how person, place, and time clues are used to formulate hypotheses.

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Review



What is descriptive epidemiology?

What are the three main categories of descriptive epidemiologic clues?

What is a hypothesis?

What is the relationship between descriptive epidemiology and hypotheses?

Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?


Ask the students the following review questions:

- + What is descriptive epidemiology? (Describes how a disease is distributed in a population of people.)
- + What are the three main categories of descriptive epidemiologic clues? (Person, place, and time; who, where, and when)
- + What is a hypothesis? (An educated guess.)
- + What is the relationship between descriptive epidemiology and hypotheses? (Descriptive epidemiologic clues provide evidence for formulating hypotheses.)

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(+ = mouse click)

Descriptive Epi



PPT Sheet

Who?
Person:

Where?
Place:

When?
Time:

#:

Whistles

Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Tell class that you want each student to think about how a disease would be distributed if a particular exposure caused the disease.

- + If it really caused the disease, who would be most likely to get the disease?
- + If it really caused the disease, where would the disease be most likely to occur?
- + If it really caused the disease, when would the disease be most likely to occur?

Ask students to think quietly about how a disease would be distributed if whistles + caused the disease.

While they are thinking, draw a “PPT Sheet” on the board, like the one depicted on this slide.

Teacher Variation: Chart can be prepared in advance and laminated for repeated use.

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PPT: Person: Who?

PPT Sheet

Person:
Lifeguards, Drum Majors,
Referees, Coaches, Traffic
Policemen

Place:

Time:

Whistles

Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Ask students if whistles caused a disease, who would be most likely to get the disease. Write their suggestions on the board. Continue asking different students the same question until you have a few suggestions written on the board. + (Lifeguards, drum majors, referees, coaches, and traffic police officers)

Next Slide

PPT: Place: Where?

PPT Sheet

Person:
Lifeguards, Drum Majors,
Referees , Coaches, Traffic
Policemen

Place:
Pools, seashore, gymnasiums,
athletic fields, intersections

Time:

Whistles

Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Ask students, if whistles caused a disease, where would the disease be most likely to occur. Write their suggestions on the board. Continue asking different students the same question until you have a few suggestions written on the board. + (Pools, beaches, gymnasiums, athletic fields, and intersections)

Next Slide

PPT: Time: When?

PPT Sheet

Person:
Lifeguards, Drum Majors,
Referees , Coaches, Traffic
Policemen

Place:
Pools, seashore, gymnasiums,
athletic fields, intersections

Time:
Hot days, schooldays, after
school, holidays

Whistles

Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Ask students if whistles caused a disease, when would the disease be most likely to occur. Write their suggestions on the board. Continue asking different students the same question until you have a few suggestions written on the board. + (Hot days, school days, after school, and holidays)

Next Slide

Person, Place, and Time

PPT Sheet

Person:
Lifeguards, Drum Majors,
Referees , Coaches, Traffic
Policemen

Place:
Pools, seashore, gymnasiums,
athletic fields, intersections

Time:
Hot days, schooldays, after
school, holidays

Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Ask students to imagine someone who does not know that whistles caused this disease and is looking at these clues and is trying to make an educated guess as to what was written on the index card.

Ask students to think about someone who is looking at these descriptive epidemiologic clues and trying to answer the question, “What’s My Hypotheses?”

Tell students that this is one of the skills that epidemiologists, disease detectives, have. They are able to look at descriptive epidemiologic clues and formulate hypotheses or educated guesses that might explain:

- Why some people got sick and others did not,
- Why the sickness occurred in some places and not in others, and
- Why the sickness occurred at some times and not at others.

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PPT Sheet

Detectives in the Classroom Name: _____
Investigation 1-3: Epi Log Worksheet Date: ____/____/____
PPT Sheet

Person:

Place:

Time:

#

Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Give each student a copy of **Investigation 1-3: Epi Log Worksheet – PPT Sheet**.

Next Slide

Don't, Don't, Don't



Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Tell students that you are about to give each of them a different + index card with a hypothesized cause of a disease written on it.


Tell students to leave the index card face down on their desks and to look at it without anyone else seeing what is written.

Tell students:

- Do not show anyone what is written on their index card.
- Do not tell anyone what is written on their index card.
- Do not ask others what is written on their index cards.

Next Slide

PPT Sheet



Detectives in the Classroom Name: _____
 Investigation 1-3: Epi Log Worksheet Date: ____/____/____
PPT Sheet

Person: _____
Who?

Place: _____
Where?

Time: _____
When?

#

Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Distribute an index card, face down, to each student.

Tell students that you want to make sure that they:

- Write the number that was written on the index card in the box in the lower right-hand corner of their **PPT Sheet**. +
- Do not write the word that is written on the index card on their **PPT Sheet**.
- Write, as they had just done with “Whistles:”
 - + Who would be most likely to get the disease, in the Person section of their **PPT Sheet**.
 - + Where would the disease be most likely to occur, in the Place section.
 - + When would the disease be most likely to occur in the Time section.

Allow students several minutes to write their clues.

As students are writing their clues, go around the room and pick-up the index cards.

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Epi Teams



Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Divide the class into Epi Teams of 4-5 students per team.

Next Slide

“Epi Team’s Hypotheses”

Hypotheses

#	#	#	#	#

Detectives in the Classroom - Investigation 1-3: What’s My Hypothesis?

As Epi Teams continue to pass their **PPT Sheets**, draw a chart on the board that is similar to the one on this slide.

Next Slide

“Epi Team’s Hypotheses”

Hypotheses

	15	#	#
Sun tan lotion			
Yelling			
Whistles			
Washing Machines			

PPT Sheet

Person:
Lifeguards, Drum Majors,
Referees , Coaches, Traffic
Policemen

Place:
Mouth, Pools, seashore,
gymnasiums, athletic fields,
intersections

Time:
Hot days, schooldays, after
school, holidays

#: 15

Detectives in the Classroom - Investigation 1-3: What’s My Hypothesis?

Label each column with the number in the lower right-hand corner of each of the **PPT Sheets** that are being passed between the Epi Teams.

Teaching Variation: This chart can be prepared in advance and laminated for repeated use. Ask students, given these clues, what they think of these hypotheses: + sun tan lotion, + yelling, + whistles, and + washing machines.

Ask students if these are good hypotheses. Ask students what makes a good hypotheses. Help students uncover that a good hypothesis is one that makes sense in light of all the descriptive epidemiologic clues. That is what makes the guess an educated guess. (Sun tan lotion, yelling, and whistles are educated guesses. Washing machines is not an educated guess.)

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“Epi Team’s Hypotheses”

Hypotheses

#	#	#	#	#


Detectives in the Classroom - Investigation 1-3: What’s My Hypothesis?

Ask one member of each Epi Team to come to the board and write their Epi Team’s hypotheses for each of the **PPT Sheet** descriptions that was passed to their Epi Team in a cell in the appropriate column.

Put an “X” in the cell of the column with the number of the **PPT Sheet** their Epi Team chose to pass. Do not write in what was written on their Epi Team’s index card.

Next Slide

Un-Real World



Whistles

Person: _____

Place: _____

Time: _____

Who?

Where?


When?

Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Tell students that in the real world epidemiologists do not have an index card + to look at.

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Real World



PPT Sheet


Who?

Person:




Where?

Place:



When?

Time:



Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

What epidemiologists do have is the ability to look at + person, + + + place, and + + + time clues and make educated guesses.

Tell students that epidemiologists realize that in the real world everyone does not get sick, in every place, at all times. Epidemiologists know that some people get sick, in some places, some of the time. And epidemiologists, disease detectives, know that these descriptive epidemiologic clues can help them formulate hypotheses.

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What's My Hypothesis?

Investigation
1-3
has ended.



Detectives in the Classroom - Investigation 1-3: What's My Hypothesis?

Tell students that as detectives in training, they are continuing to develop a fundamental epidemiologic skill: the ability to look at how a disease is distributed in a population, in terms of person, place, and time, and make educated guesses.

+ Tell students that this concludes **Investigation 1-3: What's My Hypothesis** and they can now put their Epi Logs away.