

MYSTERY PICTURE

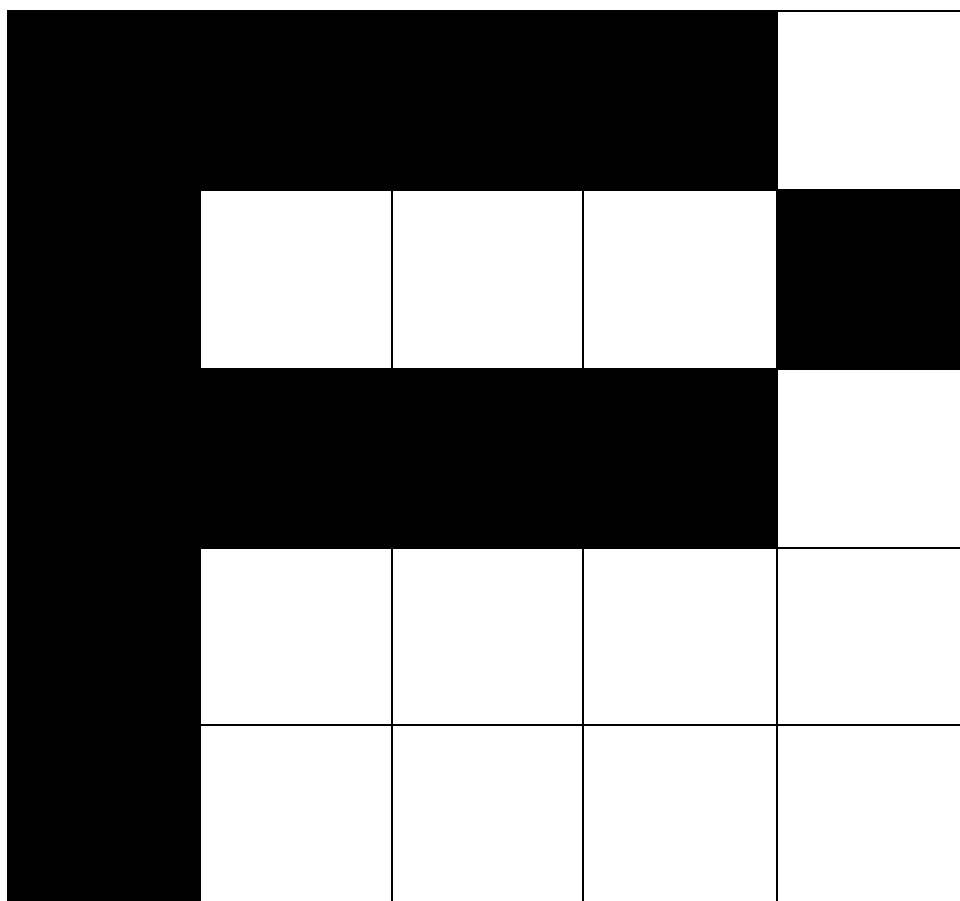


CONDITIONAL STATEMENTS AND TRUTH VALUE

Conditional Statements: Is the Underlined Part the Hypothesis?

25 sentences · if, when, because, only if · the picture checks the answers

FREE



1. **Hand out page 3.** Nothing else is needed.
2. **Say this once:** *“Find the word if. The part right after it is the hypothesis, even in the middle of the sentence. But the part right after only if is the conclusion.”*
3. **Students fill a square with slanted lines if the underlined part is the hypothesis.** A letter appears. 12 of the 25 squares are filled.

Student sheet	page 3, one per student. The three rules are printed at the top of it.
Answers	page 4: the finished picture and the reason for every square.

The first part of the sentence is often not the hypothesis. That is on purpose. The most common mistake on this topic is to take the first part of the sentence as the hypothesis. On 5 white squares the underlined part comes first, but it is not the hypothesis. A student who fills every square whose underlined part comes first gets 11 squares wrong.

“Only if” is on 7 squares. A student who knows the rule for “if” but not the rule for “only if” gets 9 squares wrong. The letter then comes out wrong, and the student can see it.

3 sentences have no hypothesis at all: two facts joined by *and*, a question, and a command. A question and a command are not statements. So neither one is true or false, and neither has a hypothesis, even when it contains *if* or *when*.

No square asks whether a sentence is true. A plain true-or-false question can be guessed, and it hides the student's mistakes.



This is the free lesson this activity came from. The worksheet, the full answers and the lesson plan are on it, at three levels of difficulty.

chooseyourlesson.com — 135 free geometry lessons.

Mystery Picture

Find the hypothesis

Name _____

Period _____

Date _____

Is the underlined part the hypothesis? If yes, fill the square with slanted lines. If no, leave it white. When you finish, a letter appears. If part of it looks wrong, check that square again.

1. Find the word **if**, **when**, **whenever** or **because**. The part that comes right after it is the hypothesis. It can be at the start or in the middle. The other part is the conclusion.
2. **Only if** is different. The part right after **only if** is the conclusion. The part before **only if** is the hypothesis.
3. A question, a command, or two facts joined by **and** is not an if-then statement. It has no hypothesis.

1 If <u>a figure is a triangle</u> , then it has three sides.	2 <u>A figure is a square</u> only if it has four right angles.	3 The sidewalk is wet if <u>it rained last night</u> .	4 The streetlights come on when <u>it gets dark</u> .	5 <u>I wash the car</u> if the weather is nice.
6 <u>You may vote</u> only if you are registered.	7 The lights are on only if <u>someone is home</u> .	8 <u>Today is Friday</u> and tomorrow is Saturday.	9 If two angles are vertical angles, then <u>they are congruent</u> .	10 The window broke because <u>the ball hit it</u> .
11 Two lines are perpendicular if <u>they meet at a right angle</u> .	12 <u>The alarm sounds</u> only if a door is opened.	13 When <u>a number ends in 0</u> , it is even.	14 Maya takes the bus whenever <u>it rains</u> .	15 <u>You are in Texas</u> if you are in Houston.
16 <u>An angle is a right angle</u> only if it measures 90° .	17 What happens if <u>it rains</u> ?	18 A figure is a rectangle only if <u>it has four sides</u> .	19 <u>I go outside</u> when it rains.	20 <u>Sam was late</u> because the bus never came.
21 A figure has four sides if <u>it is a square</u> .	22 Please close the door when <u>you leave</u> .	23 Mia plays in the game only if <u>she goes to practice</u> .	24 Because it snowed, <u>school is closed</u> .	25 When the bell rings, <u>the class ends</u> .

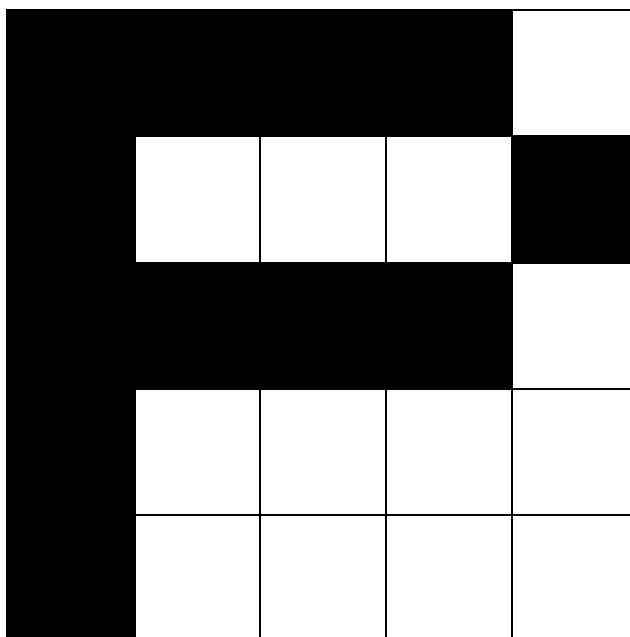


135 free geometry lessons: worksheets, worked answers and lesson plans.
chooseyourlesson.com

Mystery Picture — answers

For the teacher

The finished picture is **the letter P**. Read the table left to right, as on the student's sheet.



1–5	1: FILL The underlined part is the part after If, so it is the hypothesis.	2: FILL The underlined part is the part BEFORE only if, so it is the hypothesis.	3: FILL The underlined part is the part after if, so it is the hypothesis.	4: FILL The underlined part is the part after when, so it is the hypothesis.	5: white The hypothesis is the part after if. The underlined part is not it.
6–10	6: FILL The underlined part is the part BEFORE only if, so it is the hypothesis.	7: white The hypothesis is the part BEFORE only if. The underlined part is not it.	8: white No hypothesis. It is two facts joined by and.	9: white The hypothesis is the part after If. The underlined part is not it.	10: FILL The underlined part is the reason, after because, so it is the hypothesis.
11–15	11: FILL The underlined part is the part after if, so it is the hypothesis.	12: FILL The underlined part is the part BEFORE only if, so it is the hypothesis.	13: FILL The underlined part is the part after When, so it is the hypothesis.	14: FILL The underlined part is the part after whenever, so it is the hypothesis.	15: white The hypothesis is the part after if. The underlined part is not it.
16–20	16: FILL The underlined part is the part BEFORE only if, so it is the hypothesis.	17: white No hypothesis. It is a question.	18: white The hypothesis is the part BEFORE only if. The underlined part is not it.	19: white The hypothesis is the part after when. The underlined part is not it.	20: white The hypothesis is the reason, after because. The underlined part is not it.
21–25	21: FILL The underlined part is the part after if, so it is the hypothesis.	22: white No hypothesis. It is a command.	23: white The hypothesis is the part BEFORE only if. The underlined part is not it.	24: white The hypothesis is the reason, after Because. The underlined part is not it.	25: white The hypothesis is the part after When. The underlined part is not it.