

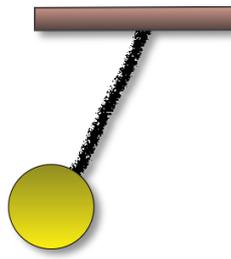
# Piaget's Theory in Key Terms 2

## Knowing and Using the Buzz Words

**1** Which Piagetian concept is depicted in each scenario below? See the top of page 2 if your mind is a blank.



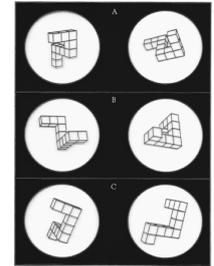
The stage in which children begin to accurately use the concepts of time, space and number is the



The stage in which children or teenagers begin to be able to control variables and think logically about abstractions is the



The child or teenager can imagine or simulate future scenarios and ponder profoundly on the question: "What would happen if...?" This is called



The concrete operational child can internally transform, manipulate and reorganise mental structures. This is the beginning of

**2** Match each term with its definition below:

### Term

- (a) concrete operational
- (b) decentration
- (c) operation
- (d) hypothetical thought
- (e) reversibility
- (f) variable
- (g) abstract thinking
- (h) classification

### Definition

- Focusing on several aspects of a task or problem in order to reach a valid and accurate solution that includes all relevant information
- Ability to imagine an abstract possibility or a complex chain of events in an unreal, speculative situation
- Ability to categorise elements or living things systematically and hierarchically
- An internal transformation, manipulation or reorganisation of a mental structure
- The stage in which a child or teenager first shows the abilities described in (b), (c), (e) and (h)
- Ability to discuss ideas that do not exist as physical objects, including concepts like justice, truth
- Ability to rewind a process mentally
- Factor that must be isolated and controlled systematically in a procedure that is carried out logically

**3** Match each term below with the appropriate description of a child's behaviour.

### Term

- (a) hypothetical thinking
- (b) abstract thinking
- (c) conservation of number

### Child's Behaviour

- A child looks at two rows with 6 coins each and agrees that they are equal. When one line is spread out, the child explains the spread out line has the same number of coins. "There is just more space between each one," she says.
- A group of teenagers discuss what an ideal future education system might look like, with ideas like online forums, nature classrooms, learning through podcasts and the abolition of joined-up writing.
- A group of teenagers discuss the meaning of justice and consider the question: "Is justice more or less important than mercy?"

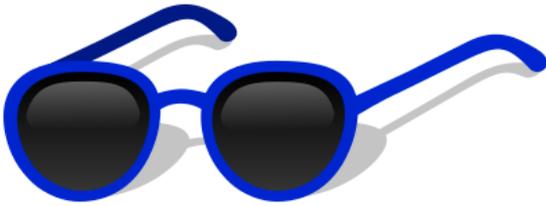
## Key Terms

concrete operational stage | decentration | formal operational stage | abstract thinking | hypothetical thinking | controlling variables | logical thinking | reversibility | conservation (mass, number, volume) | operation | classification

4 For each scenario pictured below, describe the Piagetian stage the child/teenager is demonstrating and use the appropriate terms from the list above in clearly written sentences in order to describe the cognitive abilities or limitations of the child/ren.

Begin by selecting which terms above are needed to describe each scenario. Write **(a)**, **(b)** and /or **(c)** beside the words or phrases that you will require.

**(a)** A teenager is asked to imagine the effects on the world if, as a result of a terrible disease, 99% of the world's population became blind. Her answers show an appreciation of the complex chains of cause and effect that this might trigger.



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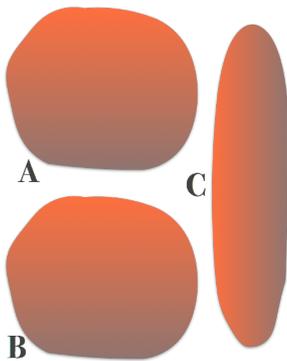
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**(b)** A child is shown two balls of play dough (A and B) and agrees that they are the same mass (after insisting that they be weighed). When one of the balls is squashed and stretched out, she says: "Of course they are still equal in mass. The sausage is certainly longer, but it is also narrower. Besides, if you rolled it up again into a ball, it would look the same as it once did."



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**(c)** A student is asked to design an experiment to determine the effects of caffeine intake on learning. He carefully ensures that he isolates "caffeine intake" so that other factors that could influence his results, such as intelligence and motivation, are minimised or evenly distributed amongst his participants.



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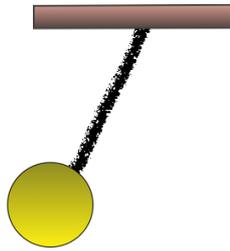
# Piaget's Theory in Key Terms 2 ANSWERS

## Knowing and Using the Buzz Words

1 Which Piagetian concept is depicted in each scenario below? See the top of page 2 if your mind is a blank.



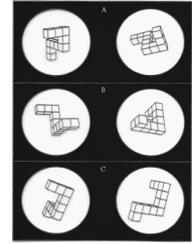
The stage in which children begin to accurately use the concepts of time, space and number is the **concrete operational stage**.



The stage in which children or teenagers begin to be able to control variables and think logically about abstractions is the **formal operational stage**.



The child or teenager can imagine or simulate future scenarios and ponder profoundly on the question: "What would happen if...?" This is called **hypothetical thinking**.



The concrete operational child can internally transform, manipulate and reorganise mental structures. This is the beginning of **operation**.

2 Match each term with its definition below:

### Term

- (a) concrete operational
- (b) decentration
- (c) operation
- (d) hypothetical thought
- (e) reversibility
- (f) variable
- (g) abstract thinking
- (h) classification

### Definition

- Focusing on several aspects of a task or problem in order to reach a valid and accurate solution that includes all relevant information **(b)**
- Ability to imagine an abstract possibility or a complex chain of events in an unreal, speculative situation **(d)**
- Ability to categorise elements or living things systematically and hierarchically **(h)**
- An internal transformation, manipulation or reorganisation of a mental structure **(c)**
- The stage in which a child or teenager first shows the abilities described in (b), (c), (e) and (h) **(a)**
- Ability to discuss ideas that do not exist as physical objects, including concepts like justice, truth **(g)**
- Ability to rewind a process mentally **(e)**
- Factor that must be isolated and controlled systematically in a procedure that is carried out logically **(f)**

3 Match each term below with the appropriate description of a child's behaviour.

### Term

- (a) hypothetical thinking
- (b) abstract thinking
- (c) conservation of number

### Child's Behaviour

- A child looks at two rows with 6 coins each and agrees that they are equal. When one line is spread out, the child explains the spread out line has the same number of coins. "There is just more space between each one," she says. **(c)**
- A group of teenagers discuss what an ideal future education system might look like, with ideas like online forums, nature classrooms, learning through podcasts and the abolition of joined-up writing. **(a)**
- A group of teenagers discuss the meaning of justice and consider the question: "Is justice more or less important than mercy?" **(b)**

## Key Terms

concrete operational stage | decentration | formal operational stage | abstract thinking | hypothetical thinking | controlling variables | logical thinking | reversibility | conservation (mass, number, volume) | operation | classification

4 For each scenario pictured below, describe the Piagetian stage the child/teenager is demonstrating and use the appropriate terms from the list above in clearly written sentences in order to describe the cognitive abilities or limitations of the child/ren.

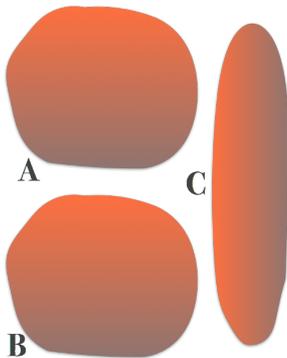
Begin by selecting which terms above are needed to describe each scenario. Write **(a)**, **(b)** and /or **(c)** beside the words or phrases you will require.

**(a)** A teenager is asked to imagine the effects on the world if as a result of a terrible disease, 99% of the world's population became blind. Her answers show an appreciation of the complex chains of cause and effect that this might trigger.



This teenager is displaying a capacity for hypothetical thought, showing that she can mentally simulate the possible effects of a imagined change in an speculative situation. This is a form of abstract thinking and becomes evident during the formal operational stage.

**(b)** A child is shown two balls of play dough (A and B) and agrees that they are the same mass (after insisting that they be weighed). When one of the balls is squashed and stretched out, she says: "Of course they are still equal in mass. The sausage is certainly longer, but it is also narrower. Besides, if you rolled it up again into a ball, it would look the same as it once did."



The child is displayed the ability to conserve mass, which according to Piaget becomes evident in the concrete operational stage. Her reasoning shows that she can take into account more than one aspect of the problem presented to her and therefore that she can "decenter". She is also able to mentally rewind the process, demonstrating reversible thinking.

**(c)** A student is asked to design an experiment to determine the effects of caffeine intake on learning. He carefully ensures that he isolates "caffeine intake" so that other factors that could influence his results, such as intelligence and motivation, are minimised or evenly distributed amongst his participants.



The student is displaying logical thinking abilities by isolating a variable and systematically testing it. This shows that he is displaying the abilities typical of a person in the formal operational stage. He is solving a problem or finding a solution to a question in a systematic, organised fashion.