Piaget's theory four stages of Cognitive development

These four stages can be further broken down:

Sensori-motor Stage (0 – 2 years)

Age & Stage	Indicative behaviours
Reflexive stage (0-2 months)	Simple reflex activity such as grasping and sucking
Primary Circular Reactions (2-4 months)	Reflexive behaviour occurs in stereotyped repetition such as opening and closing fingers repetitively
Secondary Circular Reactions (4 – 8 months)	Repetition changes to actions to reproduce interesting consequences i.e. kicking one's feet to move a mobile suspended over the cot.
Coordination of Secondary Reactions (8 – 12 months)	Responses become coordinated into more complex sequences, actions take on an 'intentional' character i.e. an infant reaches behind a screen to obtain a hidden object
Tertiary Circular Reactions (12 – 18 months)	Discovers new methods to produce the same consequence or obtain the same goal e.g. the infant will pull a pillow towards him to gain the toy resting on top of it.
Invention of new means through mental combination (18 – 24 months)	This gives evidence of an internal representational system. Symbolising the problem-solving sequence before actually responding. Deferred imitation – the child will stop and think about something before attempting to do it.

Preoperational Stage (2 – 7 years)

Age & Stage	Indicative behaviours
Preoperational Phase (2 – 4 years)	Verbal representations increase but speech is egocentric. The beginnings of symbolic rather than simple motor play. Can think about something without the object being present by use of language
Intuitive Phase (4 – 7 years)	Speech is more social, less egocentric. The child has an intuitive grasp of logical concepts in some areas. There is still a tendency to focus attention on one aspect of an object while ignoring others. Concepts formed are crude and irreversible. Easy to believe in magical increase/decrease/disappearance – reality is not firm. In this phase perceptions dominate judgements

In the moral-ethical realm, the child is not able to show principles underlying best behaviour. Game rules do not develop, uses only simple do's & don'ts imposed by authority. |

Concrete Operations (7- 12 years)

There is evidence for logical, organised thought. Ability to perform multiple classification tasks, order objects in a logical sequence, and comprehend the principle of conservation. Thinking becomes less egocentric. The child is capable of concrete problem-solving.

Some reversibility now possible (quantities moved can now be restored) e.g. 3 + 4 = 7, 7 – 4 = 3 etc

Class logic-finding bases to categorise unlike objects into logical groups.

Where previously it was superficial (based on something as simple as colour or shape)

Categorical labels such as 'number' or 'animal' now available.

Formal Operation (12 years +)

Thought becomes abstract, incorporating the principles of formal logic. The ability to generate abstract propositions, multiple hypotheses and their possible outcomes is evident. Thinking becomes tied to concrete reality.

Piaget's theory also identified some key concepts of cognitive development. The key concepts of cognitive development according to Piaget are:

- Schemas
- Assimilation
- Accommodation
- Equilibration

Schemas – describes both the physical and mental actions involved in knowing and understanding. Schemas are described as categories of knowledge that assist us to interpret and understand the world around us. Piaget's theory suggests that a schema includes both a category of knowledge and the process of gaining that knowledge. As we experience the world around us, new information is used to modify, add to, or change previously existing schemas. For example: *A young child may have a schema about a type of animal, such as a dog. If the child's only experience of dogs has been with little fluffy dogs, the child might expect that all dogs are little and fluffy and have*

four legs. When the child experiences a larger dog, the child will take in all this new information, adapting the previously existing schema to include this new information.

Assimilation – the process described above – taking new information into an existing schema is known as assimilation. The process is somewhat subjective, because we tend to modify experience or information somewhat to fit in with out pre-existing beliefs. In the example above, seeing the dog and labelling 'dog' is an example of assimilating the animal into the child's dog schema.

Accommodation – the process of modifying existing schema involves changing or altering our existing schemas in light of new information, a process indentified as accommodation. This involves altering our existing schemas, or concepts, as a result or this new information or new experience. New schemas may also be developed during this process.

Equilibration – Piaget believed that **all** children attempt to strike a balance between assimilation and accommodation which they achieve through a mechanism Piaget called equilibration. As children move through the stages of development, it is important for them to maintain a balance between applying previous knowledge (assimilation) and changing their behaviour to account for new knowledge (accommodation). Equilibration assists to explain how children are able to move from one stage of development to the next.