Concept attainment: Using what we know to learn what is new

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Originally described by Jerome Bruner, 1956 in A study of thinking. Wiley
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Concept development: a natural process

Knowledge—our understanding of the world around us—is constructed from our observations of the events and objects that we experience.

Concepts are regularities in these events and objects which we have identified, using labels or names. Concepts are communicated through the use of language or symbols.
Definition of “CONCEPT”

We can think of concepts as "rules for grouping". When students form and attain concepts, they are constructing these rules.

Learning a concept is more than recognizing previously encountered examples; it is being able to apply the “grouping rule” to recognize new, previously un-experienced examples of the concept.

Since awareness of concepts develops from personal experiences in the real world, the knowledge of a particular concept may vary from person to person.
Concepts: concrete and abstract

Concepts may be *concrete* (perceived through the five senses) *or abstract* (acquired through inference or indirectly).

• *Corn* can be observed, felt, tasted and smelled. It represents a concrete concept.

• *Government* is an abstract concept.
Concept teaching: a process

The process of “concept teaching” should encourage and build students’ confidence in their ability to think, question and discover rather than only to rely on memorization. Concept development and analysis encourage inductive thinking as students move from particular facts to generalizations.
**Concept formation**

Concept formation involves recognizing that some objects or events belong together while others do not.

When students group certain objects or events according to a particular categorization scheme, they give that group a label.

The end result of concept formation activities is that students see the relationships among the common characteristics of a concept—the inductive process mentioned above.
Examples of a sequence of activities that encourage concept formation
1. Students identify information from their own experiences that relate to the concept under investigation.

[Question: "What did you see, read, hear, ...?"]
2. Students group information or objects according to common characteristics or relationships that they themselves determine, and then give reasons for their groupings.

[Questions: ”Which of these items would you group together? Why?”]
3. Students label their groups with a word or a phrase.

[Question: "What names will you give to your groups?"]
4. *Students re-group items under other labels or they combine groups under more inclusive categories.*

[Questions: "Can some items belong to more than one group? Can some groups be combined? Explain."]
5. Students explore alternative ways of grouping and labeling based on different characteristics and relationships.

[Questions: "Can you use different criteria to group and label these items? Explain."]
Concept attainment

Concept attainment focuses on understanding which characteristics or attributes may be useful for distinguishing between members and nonmembers of a grouping or class (from Bruner, 1986).
5 key elements that define a concept

**Name:** Term given to a particular grouping of objects, events, actions

**Examples:** Instances of the concept

**Attributes:** Characteristics that are essential to place an object in a grouping

**Attribute values:** Range within which a characteristic exemplifies the concept

**Rules:** Summary, generalization or definition which specifies the critical attributes of the given concept
Questions for discussion

• Where would you place this concept in the “levels of learning” chart and why?

• How do these ideas about “concept formation” relate to “Schema Theory”?

• How can teachers help students understand concepts using an inductive approach (going from specific examples to concept formation)?