

What is common among them?

Development Stress Cat

Chair Specific gravity Freedom

Intelligence

Entropy

The Answer

The only thing common among these is that
Each of these is a
CONCEPT

TD 638:
Development Perspectives

Topic: Understanding Concepts, Models, and
Theories

Part A: Introduction

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Think and Try to Answer

What is
a **Cat**?

Some responses from students on the question of:

What is a **Cat**?

Student 1

- It has four legs.
- It has whiskers.

Student 2

- Cat is a furry animal.
- It meows.

Student 3

- Every cat has nine lives.
- It is most celebrated animal on the social media.

Student 4

- It is smaller than dog.
- It has a long tail.

Student 5

- Cat is domesticated animal from the feline family.

What is a Concept ?

- **Concept** is a *general idea*
 - about something
 - that is expressed in
 - a short phrase /single word.
- A '**concept**' is not 'the **thing**'
- but 'an (abstract) **idea**' of 'a **thing**'
- It is an **idea** (i.e., a cognitive construct)
composed of different **attributes**
that gives the '**thing**' a distinct
characteristics.
- It also has a **label** or **title**.
- Thus, a **Concept** has **three elements**:
- An abstract **IDEA**, a **Label**, and a set of **ATTRIBUTE**

Think and Try to Answer

What is
a **Chair**?

Some responses from students on the question of:

What is a **Chair**?

Student 1

- It has four legs.
- It has back support.

Student 2

- It is a piece of furniture.
- It is made of wood and steel.

Student 3

- It is meant for sitting.
- It is something politicians are very fond of.

Student 4

- It may have three legs.
- It has multiple uses.

Student 5

- Even professors are very fond of it.

Different Types of Attribute of the Concept

Primary Attributes

- ✓ What **known class or a group** does the 'thing' **belong** to?
 - Example: Chair belongs to the **class/group** of "Furniture". So Primary Attribute for the concept of Chair:
 - *"It is a piece of Furniture"*

Additional / Secondary / Cosmetic Attributes

- ✓ What **describes** it? Adds to its description

Example: Secondary Attributes: (i) It has four legs. (ii) It has back-support. (iii) It is made of steel/ wood.

Defining Attribute(s)

- ✓ What **defines/ distinguishes** it from other things within the class ?
 - Example: Distinguishing feature/ Attribute among other concept in the class of furniture:
 - *"It is meant for sitting"*

Think and Try to Answer

What is common between
a **bank** and a **tree**?

A **Branch**

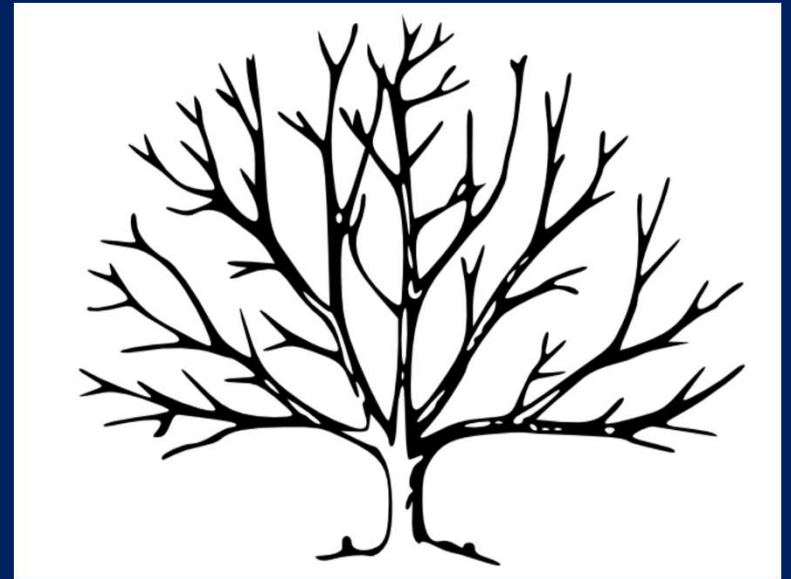
Why it (a **branch**) is common between the two ?

Or

What makes it common between the two?

We imagine something like this:

- When we say **branch** of a **bank**, we mean bank's **sub-divisional** office
- When we say **branch** of a **tree**, we mean a **sub-division** of the trunk of the tree.
- What is **common** is the idea of '**sub-division**'.
- Which is expressed in the form of the concept of '**branch**'.
- Thus, '**branch**' is the label
for the idea of '**sub-division**'.



Branching = The main “thing” dividing into
“sub-divisions”

Why we need concepts? . . .1

- To understand the outside world,
 - we need to **impose meaning**
 - on the physical things or social phenomena,
(e.g. **by calling** sub-dividing of a tree trunk
OR subdivision of a big bank **as a BRANCH**)
 - we do it by using **concepts**
 - that have both **meaning** and **label**.

Example:

- A 'Branch' is a **concept**
- That has **meaning** = sub-division
- **Label** = The term/word branch
- We are using it to indicate sub-division
 - in a tree trunk and also in a bank

Why we need concepts? . . . 2

Concepts: Building Blocks of human knowledge

- Once your colleagues or friends know and agree on
 - what a **branch of a tree** *means*
 - You can **talk about** so many **different things**, using the **same concept** (i.e., branch of the tree)
 - Examples: You can remember with your school friends, how you all would enjoy sitting on a branch of a tree and talk endlessly
 - You can discuss with your photography friends how a picture could be composed using branches of a tree
 - You can discuss with your Nature Club friends how the branches of a tree are dyeing.
- You can use the concept of branch of bank in different conversation with friends and colleagues from different groups.

Think and Try to Answer

What in your opinion is an **ideal classroom**?

Please come up with **three distinguishing features** for the concept.

Some responses from students on the question of:

What in your opinion is an ideal classroom?

Student 1

- It is a place for academic learning.
- It is a sacred place.
- It should be a calm place as near as possible to nature.

Student 2

- The place should allow free flow of communication among students and teacher.
- It should have good acoustics'.
- It should make use of modern technology for communication.

Student 3

- I want it work for students.
- Primarily, it should serve needs of students.
- In case of Mumbai, it should have a good AC.

Utility of Concepts

Concepts are tools for

- thinking
- Explaining
- criticizing
- analysing
- arguing
 - over any issue

- By *developing* and *redefining concepts*,
- we *understand* the world in better manner.
- Examples:
 - *Bits* and *Bytes* in Computer Science or the *Internet*; *Face + Book*

Types of Concepts

Types of Concepts

- **Normative Concepts:** which tell us what *should, ought, must happen or be done*.

They signify the '**value**' (value in *ethical* sense, not *economic*).

- **Descriptive / 'Positive' Concepts:** refer to a '**fact**' or '*a reality*', and *describe* what *is* there and hence are *verifiable* by anybody

(Positive here mean *reflecting the experience*)

In many '*political*' concepts, a '**fact**' and the '**value**' are *interlinked*.

- **Contested Concepts:** Concepts involving a *controversy* or *conceptual disagreement / debate*.

Many and competing interpretations of concepts,

and many or all could be *equally valid* (from different perspectives)

What is a model?

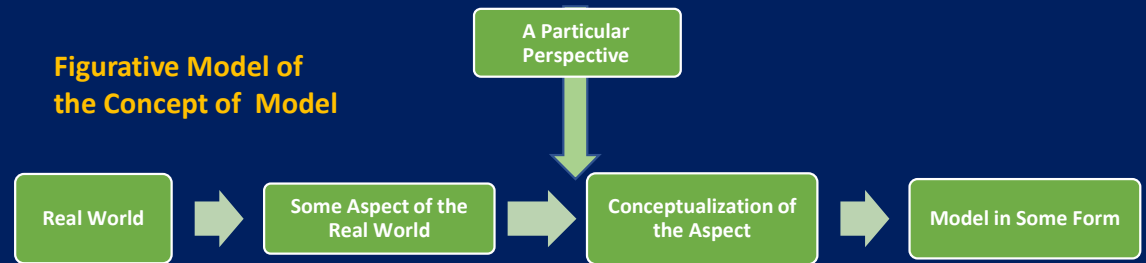
A **model** is

- a **simplified** and **selective**
- **abstraction** (i.e., representation/ conceptualization)
- of a certain **aspect**
- of the **real world** object or phenomenon
- when viewed from a particular **perspective/ standpoint**.

Model could be in **different forms** (physical, mathematical, narrative, figurative)

Normative Models tell us what **should** be done. (Norm)

Descriptive Models describe or tell us what **is** there. (Fact)



Architectural Model of a Building



12 x 371

Models, Theories and Laws

Model is abstract description of a part of the social phenomenon

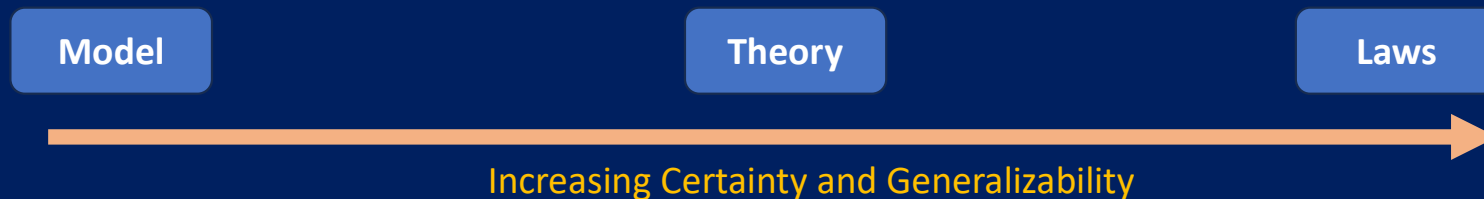
It is accepted as a partial, simplified, and possible description of the phenomenon, to be used in conjunction with other models.

Hypothesis: A possible generalizable explanation to the phenomenon.

Theory: A tested and validated Hypothesis.

Theory: A validated claim about the generalizable explanation to the phenomenon. (Weak/ Strong & Meta/Meso/Micro)

Law: Well-established, undisputable, universally applicable theory (generalizable explanation)



Class Work: A Quiz (Part 1) (Time 15 minutes)

Preliminaries

- Take a piece of paper (A-4 size or long notebook size) with both sides blank. (Give page number 1 to this side)
- On the top of one side of the paper, put your Name, Roll Number, Program, and Year.

Deciding on a Concept for Analysis

- Choose any one most simple (such as a chair and cat) concept that is related to your everyday normal experiences.
- This should not be a technical concept that is related to your area of research or study.
- Any other student from your class should be able to easily understand and relate to the concept.

Analysis of Concept

- Now, analyze or split this concept in terms of its Primary and Defining Attributes.
- List separately these attributes, starting with (a) Primary Attributes (should not be more than 2 preferably)
- and (b) Defining Attributes (should not be more than 3 preferably)
- You may do **rough work** on your notebook before writing the **final version** of the attributes on the paper.

Class Work: A Quiz (Part 2)

Preparatory

- Exchange your paper with another student in the class, preferably one who is not from your program.
- Record the name, roll number, hostel number, and phone number of the student to whom you are giving the paper.
- After getting the paper from another student, on the top of the other side of the paper,
 - put your Name, Roll Number, Program, and Year (Give page number 1 to this side)

Reflections

- Study the work done by the other students whose work is with you for reflection.
- Tell us what part you like or approve of and what parts you do not agree with.
- Most importantly, try to redefine the concept by changing the Primary and Defining Attributes.
- Tell us the reasons or justifications for the changes you made and the changes you did not make.

Thank you