The model of memory

- Memory as processing of information
- Encoding, storage and retrieval
- The model of memory
  - Sensory memory
  - Short-term memory
  - Long-term memory
  - Duration and capacity of each
- Depth of processing and memory
- Maintenance versus elaborative rehearsal

Forgetting

- Encoding failure
- Decay
- Interference
  - Proactive
  - Retroactive
- Motivated forgetting
  - Supression
  - Repression
- Amnesia
  - Retrograde
  - Anterograde
  - Infantile

Organization of information and Memory

- Serial position effect
  - Primacy effect
  - Recency effect
- Clustering (categories)
- Hierarchies
- Chunking
- Mnemonics

How Reliable is Memory?

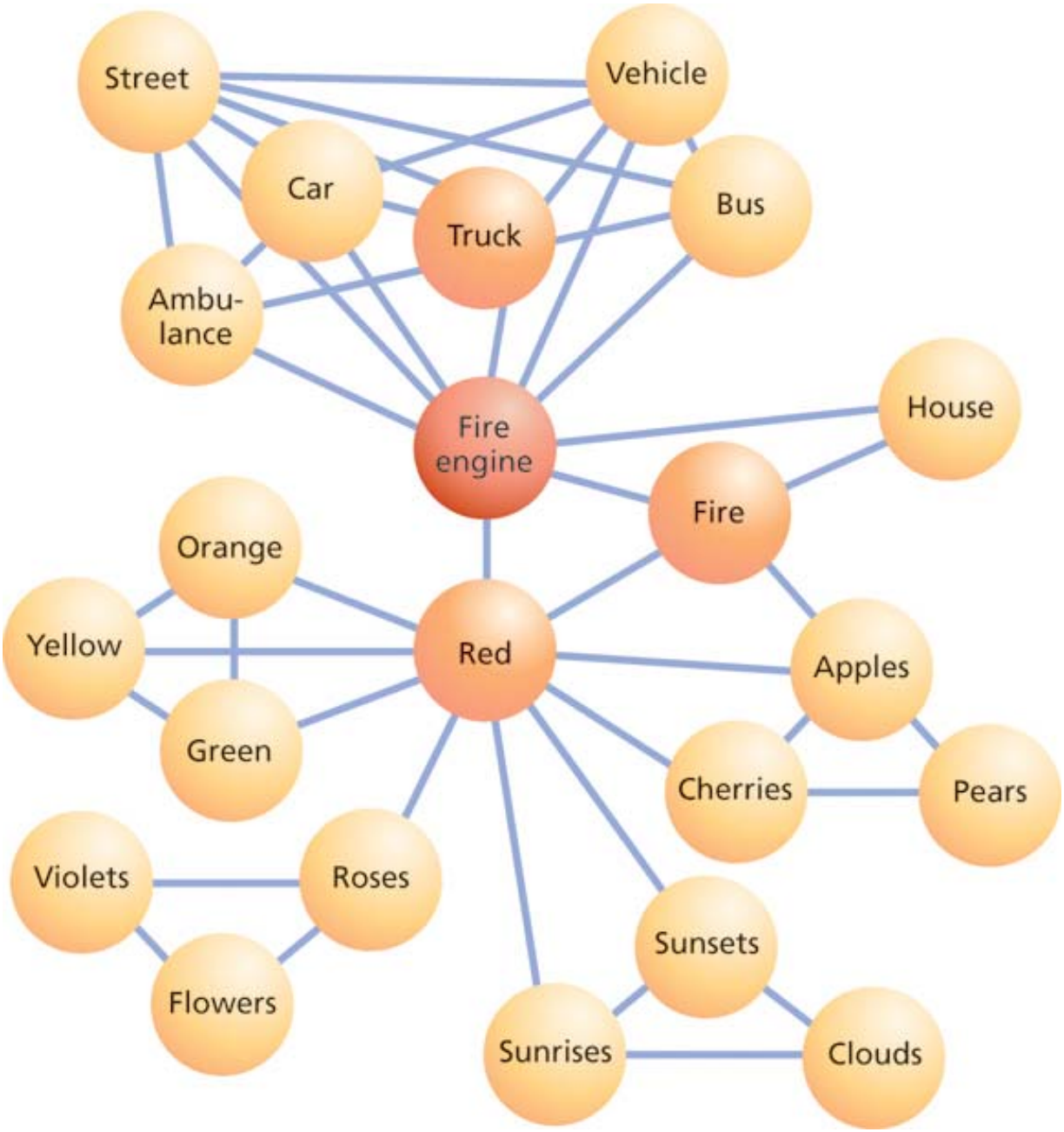
- Memory as a constructed process
- Memory distortions and schemas
- Perceptual sets and memory
- Misinformation and leading questions
- Why is learning about the reliability of memory important?

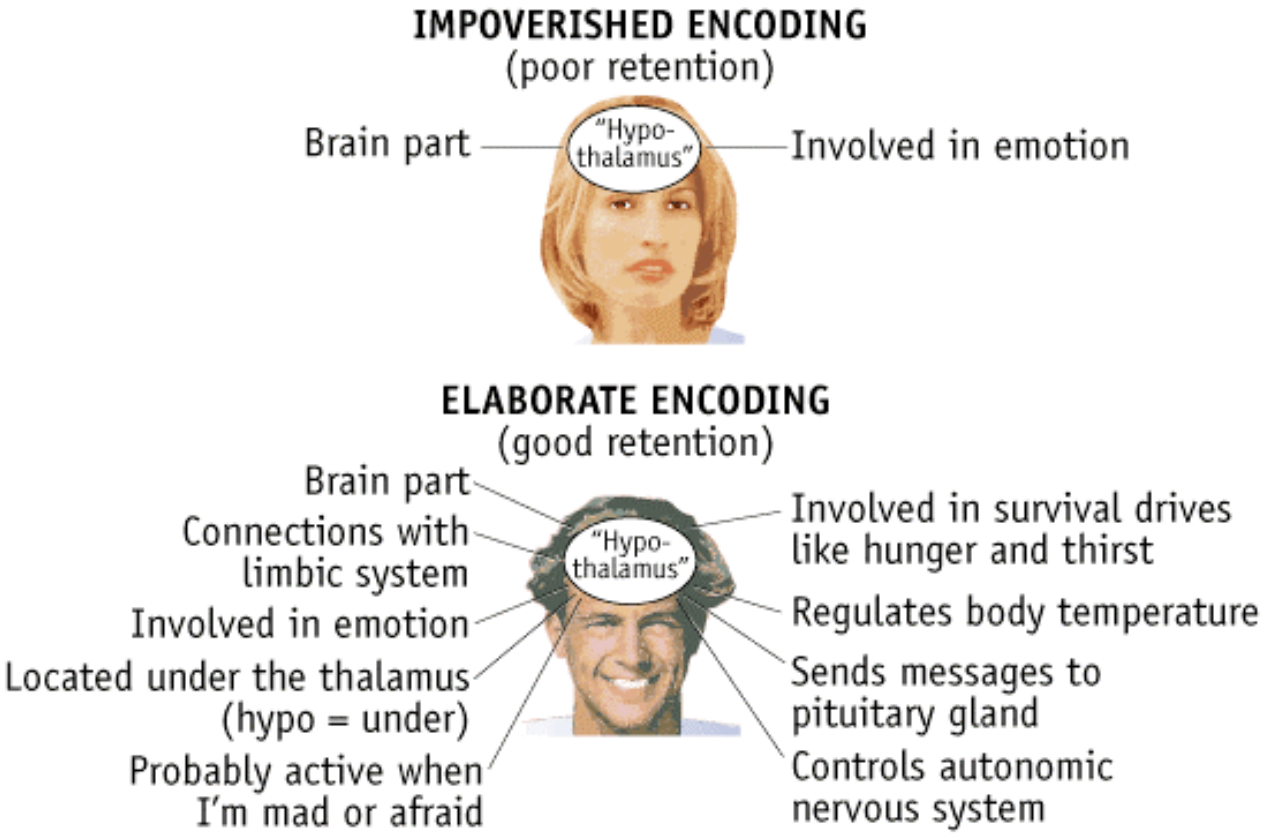
Storage and Retrieval

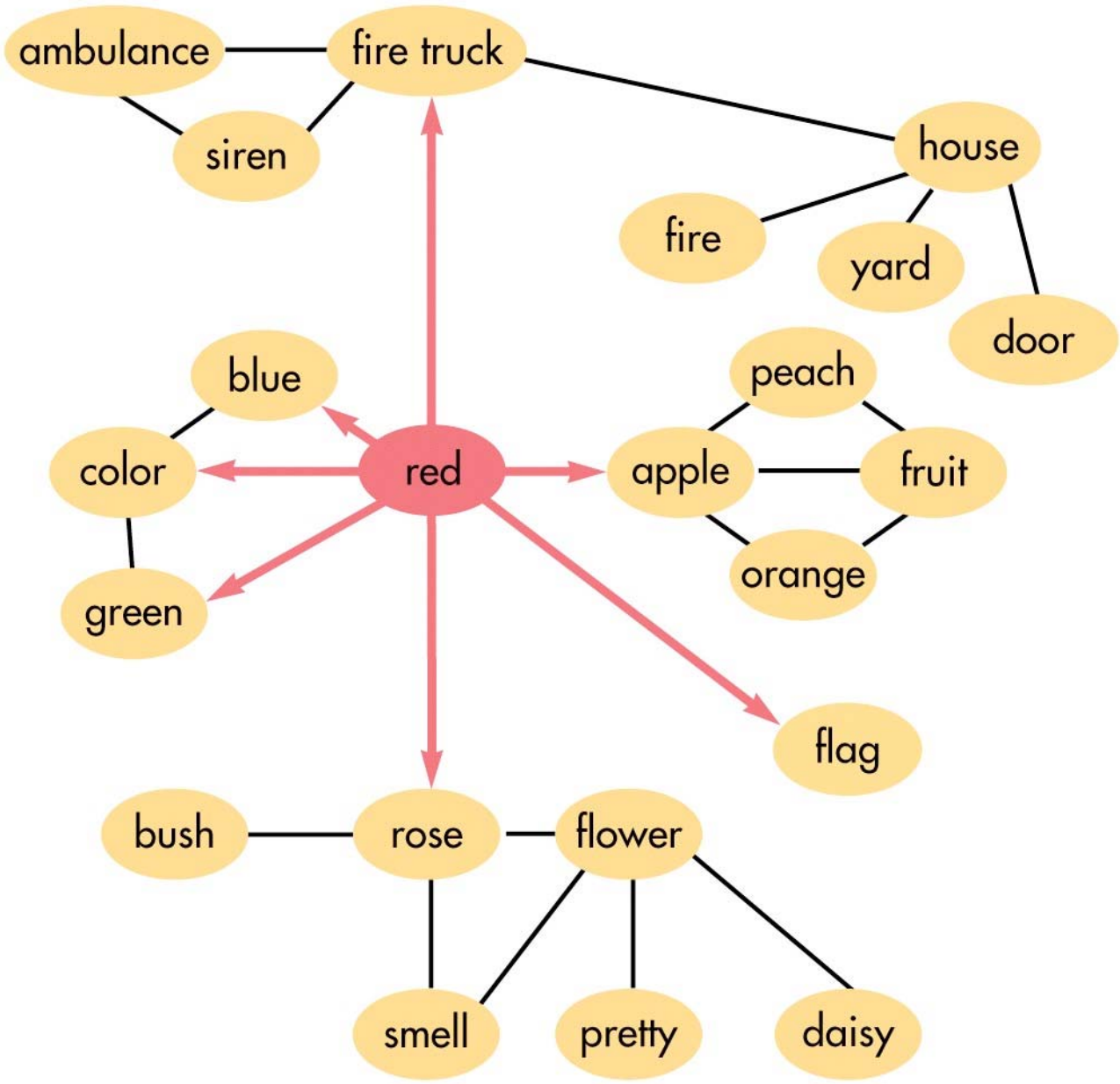
- Associative networks (semantic networks)
- Types of long term memories
  - Procedural
  - Semantic
  - Episodic
- Methods of retrieving information
  - Recall
  - Recognition
  - Free recall
- Encoding specificity principle
  - Context effects
  - Mood congruence
  - State dependent retrieval

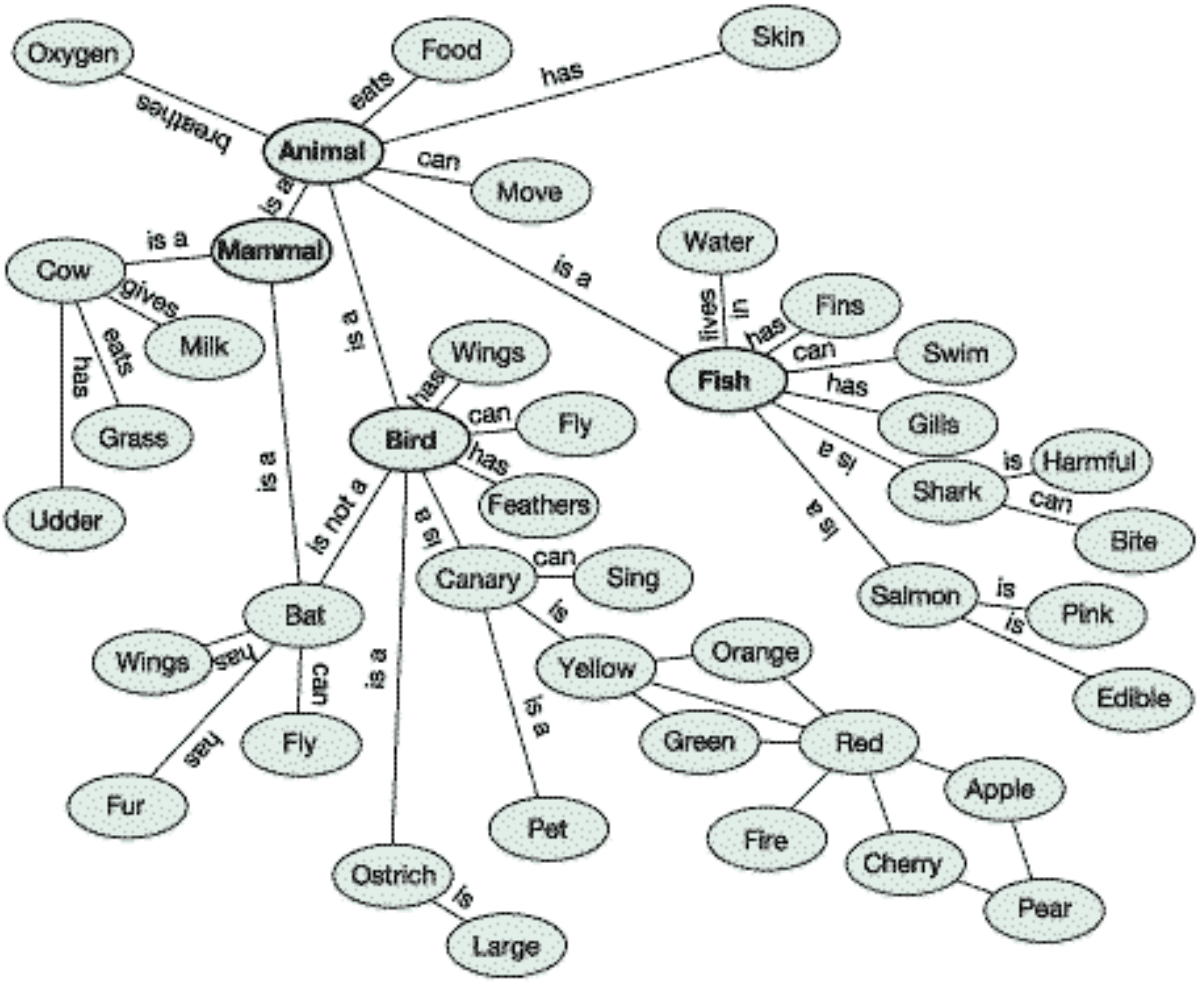
Storage: Semantic Networks

Semantic networks: A model that describes units of information in long term memory as being organized in a complex network of associations. Notice the connection to elaborative rehearsal. See figure 7.12, page 245.



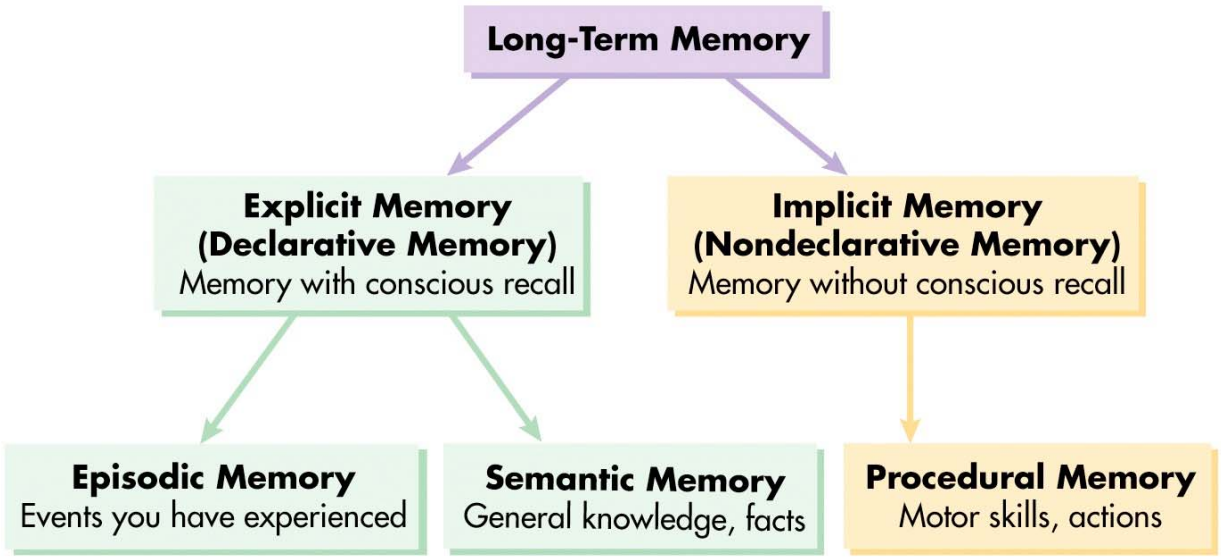

IMPOVERISHED ENCODING
(poor retention)
Brain part
"Hypo-thalamus"
Involved in emotion
ELABORATE ENCODING
(good retention)
Brain part
Connections with limbic system
Involved in emotion
Located under the thalamus (hypo = under)
Probably active when I'm mad or afraid
"Hypo-thalamus"
Involved in survival drives like hunger and thirst
Regulates body temperature
Sends messages to pituitary gland
Controls autonomic nervous system

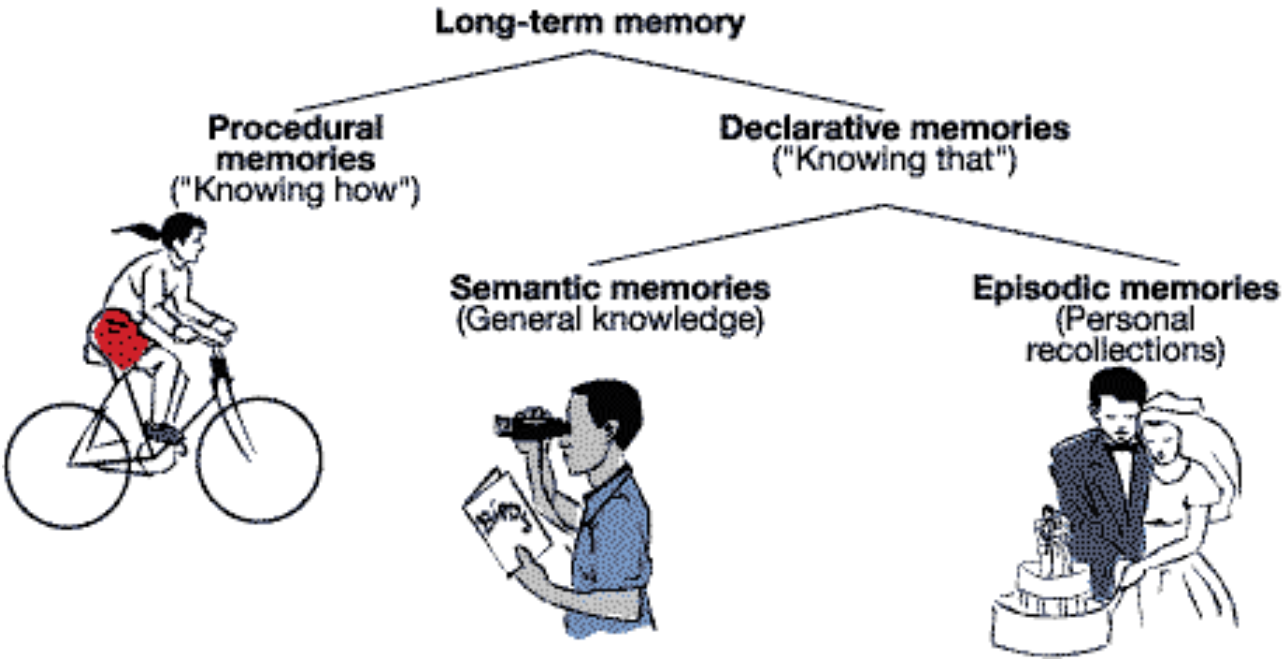

ambulance
fire truck
siren
house
fire
yard
door
blue
peach
color
red
apple
fruit
orange
green
flag
bush
rose
flower
smell
pretty
daisy


Oxygen
breathes
Food
eats
Skin
has
Animal
can
Move
is a
Mammal
is a
Cow
gives
Milk
eats
Grass
has
Udder
is a
Bat
is not a
Wings
has
Fly
can
Fur
has
is a
Bird
Wings
has
can
Fly
has
Feathers
is a
Canary
can
Sing
is
Yellow
Orange
Green
Red
is a
Pet
is a
Ostrich
is
Large
is a
Water
lives
in
Fish
has
Fins
can
Swim
has
Gills
is a
Shark
is
Harmful
can
Bite
is a
Salmon
is
Pink
is
Edible
Apple
Fire
Cherry
Pear

Storage: Long Term Memories

(Figure 6.5, page 252, Hockenbury)





Procedural Memory	Semantic Memory	Episodic Memory
Information that is usually difficult to recollect such as how to perform different skills, operations and actions.	Information that can be consciously recollected. This takes the form of general knowledge such as facts, names, and concepts.	Information that can be consciously recollected about personally experienced events.

Implicit memories	Explicit Memories

You will see a variety of strategies to remember information. Try to make it a procedural memory, instead of a semantic memory

LONG-TERM MEMORY		
Explicit memory (declarative memory)		**Implicit memory (non-declarative memory)**
Semantic Memory	Episodic Memory	Procedural Memory
Information that can be consciously recollected. This takes the form of general knowledge such as facts, names, and concepts.	Information that can be consciously recollected about personally experienced events.	Information that is usually difficult to recollect such as how to perform different skills, operations and actions.
• John Ashcroft, Donald Rumsfeld, Dick Cheney, Colin Powell, Condelissa Rice are… • I remember that the chemical formula for water is H_2O. • I know that the shortest day of the year is in December. • I know good study skill strategies. • I know that velvet is soft.	• I remember where I was when I heard that the World Trade Center was on fire. • I remember listening to Peter DeFazio speak in one of Steve Candee's classes. • I remember playing with my dog during the summer we got him. • I was watching the Iran-Contra hearings just before my television broke.	• Your ability to type. • Your ability to drive. • Setting up flow chart. • Cooking (for some people). • Your knowledge of how to play the guitar. • Your knowledge of how to play basketball. • Making a paper airplane. • Your ability to study.

Retrieving memories	Forgetting
Retrieving memories • Recall • recognition • cued recall Encoding specificity principle • Context effects • State dependent learning • Mood congruence	Encoding failure--sometimes it doesn't get in • invited inferences • schemas, and • _____ example Decay Interference • Proactive • Retroactive Motivated forgetting • Suppression • Repression Amnesia • Retrograde • Anterograde • Infantile

Retrieval: Accessing Information

Recall: A test of long-term memory that involves retrieving information without the aid of retrieval cues. This is sometimes called free recall. Recall involves a two-step process:

1. the generation of possible targets, and
2. the identification of genuine ones.
    - Name the Seven Dwarves.
    - Name Oregon's two senators in the United States Congress.

Cued recall: A test of long-term memory that involves remembering an item of information in response to a retrieval cue.

Retrieval cue: A clue, prompt, or hint that helps trigger recall of a given piece of information stored in long-term memory.

- Name the Seven Dwarves. Hint: One was always smiling, one was smart, one never talked, one seemed always to have a cold…

Having multiple cues increase the likelihood that you will recall what you are looking for. Why?

Recognition: A test of long-term memory that involves identifying correct information out of several possible choices. Unlike recall, the generation of possible targets is already done.

- Which of the following were among the Seven Dwarves: Sneezy, Sleazy, Dopey, Dippy, Hippy, Happy…?

4th Edition, Kalat, J. (1996)

Retrieval: Encoding Specificity Principle

context effects	The tendency to information to be retrieved easier when the retrieval occurs in the same setting or environment as the original learning of the information. • I cannot recall my voice-mail number until I get to the phone. • Wolverine couldn't remember his past until he returned to the "secret lab"
state-dependent learning	The tendency to remember information when the physiological state matches the physiological state in which it was learned. • If you learned information while using drugs, being tired, etc., it is more likely that you will recall that information while in the same state (ie. drugged state, tired, etc.). However, drugs impair your ability to learn, so taking drugs does not facilitate learning.
mood congruence	The tendency for a given mood to evoke memories that is consistent with that mood. • Happy memories are easier to retrieve when in a happy mood. • Sad memories are more likely to be retrieved than happy ones when in a sad mood.