Analogies

Analogy in communication promotes understanding.

Use of analogy in nature supports creative problem solving (mechanical inventions from biological analogy)

> I can solve this problem in a way similar to how that problem was solved.

Working analogy problems requires

- Spelling out ideas fully

- Formulating precise relationships of facts

- Developing correspondences between ideas

- Comparing relationships for similarities and differences

These skills are central to all problem solving.

Gills are related to *fish* as *lungs* are related to *humans*.

Restate:

- *Gills* are used for breathing by *fish*.
- *Lungs* are used for breathing by *humans*.
- (Where did "used for breathing" come from?)

Define a "relationship sentence":

- _____ are used for breathing by _____.

The key issue in analogy problems is picking the proper relationship sentence.

Carpenter is to *saw* as *plumber* is to *wrench*.

- A ____ is a ____.
- A ____ cuts wood with a ____.
- A ____ uses a tool called a ____.

Stewardess is to *airplane* as *waitress* is to *restaurant*.

- A ____ is a(n) ____.
- A ____ works in a(n) ____.
- A ____ gives safety instructions in a(n) ____.

Guitar is to *pick* as *fiddle* is to *bow*.

- A ____ is played with a ____.
- A ____ is plucked with a ____.
- A ____ is a ____.

Fence is to *garden* as *bumper* is to *car*.

- A ____ helps protect a ____.
- A ____ keeps trespassers out of a ____.
- A ____ surrounds a ____.

20 is related to 10 as 50 is related to 40.

- ____ is ten more than ____.
- ____ is twice ____.
- ____ is one-half of ____.

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50 is related to 48 as 67 is related to 64.

- _____ is two more than _____.
- _____ is larger than _____.
- _____ is smaller than _____.

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Mouth is to *talk* as *hand* is to *grasp*.

6 is related to 2 as 21 is related to 7.

70 is related to 30 as 35 is related to 15*.*

Arrive is to *depart* as *find* is to *lose*.

Roots are to *plant* as *mouth* is to *animal*.

Peacock is to *bird* as *tuxedo* is to *suit*.

50 is related to 20 as 90 is related to 60.

Now we look at the standard form of analogy problems on tests.

- One pair is given, you pick another pair that has the same relationship.
- It helps if you can define a relationship sentence.

Thermometer is to *temperature* as _____ is to _____.

a) telescope : astronomy

b) clock : minutes

c) scale : weight

d) microscope: biologist

Analogy Problem 2

Horse is to *animal* as _____ is to _____.

a) cow : milk

b) farm : pig

c) oak : wood

d) saddle : stallion

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2 is to 6 as _____ is to _____.

a) 6 : 2

b) 12 : 36

c) 3 : 1

d) 12 : 60

Pack is to *wolves* as _____ is to _____.

a)   alphabet : letters
b)   wheel : spokes
c)   garage : cars
d)   aquarium : fish

Same idea, just a different format.

_____ is to dollar as year is to _____.

a) money : calendar

b) penny : century

c) dime : month

d) savings : century

Try each choice. If the relationships are different, the answer is wrong. If the relationships are unclear, then hold the answer to reconsider.

_____ is to *cave* as *car* is to _____.

a) Modern : primitive
b) Stone : steel
c) Primitive : modern
d) Apartment house : horse

Contrasts

negligence is to careful as bravery is to cowardice

Part to whole

keyboard is to computer as trunk is to car

Part to part

keyboard is to mouse as trunk is to hood

Activity to result

heat is to warmth as rain is to flooding

Some Common Types of Analogies

Individual to object

> doctor is to stethoscope as painter is to brush

Measure

> clock is to time as decibel is to sound

Degree of difference/similarity

> cool is to frozen as breeze is to gale

Use

> pencil is to write as scissors are to cut

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