



Bonus Question .....

Which plant would grow best if you planted it in a flower box outside of the Science Classroom?



X	Marigold	Petunia	Impatiens
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Marigold is the best choice, because it does well in full sun .....

The Science Room has a South exposure to the sun, so it would be in full sun for most of the day

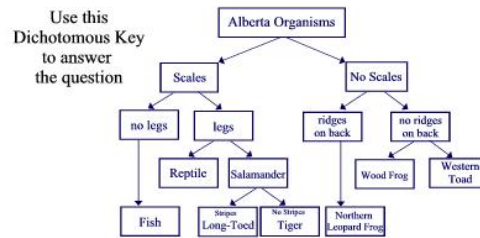
Interactions and Ecosystems

Key

- Living things have basic needs. Throughout the first topic in this unit the needs of living things were examined in depth. The four basic needs of living things are:
  - food, clothing, shelter, love
  - food, water, habitat, space
  - water, air, habitat, protection
  - air, water, food, habitat (SF p. 8)** All living things need food, water, a suitable habitat and exchange gases.
- Some living things depend on each other in a very close relationship, which benefits both organisms and lasts over time. This relationship is called ...
  - mutualism
  - parasitism
  - symbiosis (SF pgs. 14 and 15)** All of the other distractors are examples of a type of symbiotic relationship, symbiosis is the name given that describes the relationship.
  - commensalism
- Adaptations are inherited characteristics that help an organism to survive and reproduce in its environment. Looking both ways before crossing a street helps us survive because it is ...
  - inherited from our parents
  - learned through experience (SF p. 10)**
  - a survival adaptation
  - an inherited survival experience
- 'Wants' are things that make our life more enjoyable. The distinction between a 'need' and a 'want' has become blurred. Satisfying our needs and wants usually uses natural resources. Which of the following is an example of a luxury?
  - water from a well
  - potatoes from a garden
  - greenhouse tomatoes (SF p. 23)** Figure 1.17 These year-round tomatoes are a 'luxury'.
  - crabapples from your tree
- Predators such as wolves and coyotes - and even bears - are moving closer and closer to highly populated areas. This is posing an increased danger to people, so predator populations are being *culled* (reduced in number). This can have a devastating effect on the ecosystem, because without this natural control ...
  - prey will also be reduced
  - prey will become overpopulated (SF p. 25)** The prey will not have any natural enemies, so their populations will increase and vegetation would be threatened with overgrazing.
  - prey will be kept in check
  - vegetation will be overgrown
- Living beyond our means can have a devastating effect on our environment. So how much of an impact we make determines our ...
  - sustainability
  - ecosystem balance
  - ecological footprint (SF p. 30)**
  - consumer bias

7. When used materials are turned into new materials, *like kitchen scraps placed in a compost bin*, the practice being used is ...
- A. **recycling (SF p. 33)** This practice takes waste materials and turns them into useful materials for the environment or for another use
  - B. reusing
  - C. reducing
  - D. reclaiming
8. *Decomposers and scavengers* get rid of the garbage and waste in an ecosystem. Decomposers differ from scavengers because they ...
- A. only eat dead organisms
  - B. **do not eat dead organisms (SF p. 45)**
  - C. break down larger organisms
  - D. only feed on dead plants and animals
9. Carbon is an integral part of an ecosystem. It is cycled throughout the ecosystem as it is used and then reused. It is necessary for all life to exist. Carbon is *used by plants* in the process of ...
- A. respiration
  - B. **photosynthesis (SF p. 49)** Plants use carbon dioxide in the process of photosynthesis - making their own food.
  - C. transpiration
  - D. decomposition
10. Whenever an ecosystem is monitored to see what types of changes occur over a period of time, it is very important to identify what the ecosystem was like before the change was noticed. This information is called ...
- A. impact assessment
  - B. **baseline data (SF p. 74-75)** Definition and Figure 1.68
  - C. permanent plot
  - D. quadrant sample
11. *Succession* is a gradual process within an ecosystem in which some species replace other species. When a forest fire destroys a certain area, regeneration occurs. This is an example of ...
- A. micro-succession
  - B. eco-succession
  - C. primary succession
  - D. **secondary succession (SF p. 57)** Figure 1.48 shows the process of secondary succession in a burned forest
12. Petroleum products, which contain *carbon*, are burned, and the carbon escapes into the atmosphere, as carbon dioxide, BUT, how does it get into the petroleum in the first place?
- A. refineries
  - B. plant respiration
  - C. **decomposing plankton (SF p. 49)** Over time and under great pressure, decomposing plankton changes into fossil fuels, which are petroleum products.
  - D. photosynthesis in plants
13. Another very important cycle is the *Water Cycle*. All living things need water to live. This cycle has four main processes. The two processes that return water to the earth are ...
- A. evaporation and condensation
  - B. **condensation and precipitation (SF p. 51)** Figure 1.41
  - C. transpiration and condensation
  - D. evaporation and transpiration
14. Biological control is used to control pests. Unfortunately, there are risks involved, if the biological control is a *new species* to the area. The reason for this is because it ...
- A. might not have enough food to survive
  - B. may get killed off more quickly than expected
  - C. **has no natural predators, so it will overpopulate the area (SF p. 63)** If it has no natural predators, it will thrive and take over the ecosystem
  - D. could restore the balance and be ineffective
15. Different kinds of monitoring can occur to ensure that changes in the ecosystem are noticed and addressed. If the population of caribou suddenly declined in a particular area it would be noticed by this type of *ecosystem monitoring*.
- A. physical
  - B. environmental
  - C. chemical
  - D. **biological (SF p. 68)** Figure 1.62D

16. A dichotomous key is used to identify things by their *distinguishing structural characteristics*.



The Alberta Organism that has **scales, legs and no stripes** is a ...

- A. wood frog  
 B. reptile  
 C. **Long-toed (Tiger) salamander (SF p. 73)**  
 D. northern leopard frog
17. To determine an organism's *niche*, all of the following must be determined, EXCEPT ...  
 A. **how it is classified (SF p. 40)**  
 B. what it eats  
 C. where it lives  
 D. what relationships it has with other organisms
18. The aftermath of *the Mt. St. Helen's Volcano* eruption in 1980, was monitored to see just how quickly *spiders* would return to the area. This type of monitoring is called ...  
 A. physical  
 B. **environmental (SF p. 69) Figure 1.64**  
 C. chemical  
 D. biological
19. Whenever an ecosystem is *monitored* it is impossible to count all the organisms in the ecosystem. To estimate the size of different *populations*, scientists use this technique, called ...  
 A. impact assessment  
 B. baseline data  
 C. permanent plot  
 D. **quadrant sample (SF p. 76) The quadrant sampling technique is described in the procedure - Inquiry Investigation 1-L**
20. A salamander hides under the bark, fungi grows on the rotting log and other forest dwelling organisms use the hollow core as a home. This *rotting decaying log* is an ...  
 A. environment  
 B. ecological subsystem  
 C. micro-environment  
 D. **ecosystem (SF p. 13)**

## Plants For Food and Fibre

## Key

21. Cotton is a natural fibre that has been around for centuries. It is used extensively throughout the world and is the world's most important non-edible plant. Cotton fibres come from cotton ...  
 A. flowers  
 B. **seeds (SF p. 94)**  
 C. stems  
 D. leaves
22. Many plants are used for medicine. Aspirin is a good example of a medicine that has been synthetically developed in the laboratory. Another very powerful pain medication is *morphine*, but it cannot be manufactured. Instead, it is extracted from the thick fluid of the ...  
 A. quinine cinchona tree  
 B. **poppy seed pod (SF p. 98) Figure 2.5**  
 C. echinacea root  
 D. ginkgo bilboa root
23. *Root crops* are those types of crops that grow in a very short period of time and can survive when there is little rainfall. Another important quality which makes them an important part of the world's vegetable diet is that they ...  
 A. are very tasty  
 B. can be frozen easily  
 C. **can be stored for a long time (SF p. 106) Figure 2.16**  
 D. are easily harvested

24. *Diffusion* is the tendency of particles in a gas or a liquid to become ...
- A. less concentrated, in areas of high concentration
  - B. highly concentrated, in areas of low concentration
  - C. evenly distributed, by moving from an area of low concentration
  - D. evenly distributed, by moving from an area of high concentration (SF p. 107)**
25. The leaves are the plants food factories. During the day, the plant uses carbon dioxide and water. When there is no light, the *plant releases carbon dioxide and takes in oxygen*. This process is called ...
- A. photosynthesis
  - B. transpiration
  - C. Respiration (SF p. 111)**
  - D. osmosis
26. *Canola* is an example of a plant that was developed by selective breeding. This new variety of plant has seed that create a 'good-tasting' oil. The original parent plant produces oil from its seeds which can be used to *lubricate engines* (but is not edible). The parent plant is ...
- A. flax
  - B. wheat
  - C. mustard
  - D. Rapeseed (SF p. 117) Figure 2.26**
27. A strawberry plant sends out '*runners*', which, when covered over by soil, can grow into a new strawberry plant, *identical to its parent*. This type of reproduction is called ...
- A. asexual (SF p. 118) Figure 2.27 - also referred to as 'layering'**
  - B. sexual
  - C. grafting
  - D. selective breeding
28. Seeds are formed in a flower, once the reproductive parts of the flower complete the process of pollination. The *cotyledon* is a vital part of the 'seed in storage'. It's function is to ...
- A. protect the embryo
  - B. fertilize the egg
  - C. provide food (SF p. )**
  - D. enable the seeds to disperse
29. The necessity to grow food and fibre for people around the world has created some important issues, which need to be addressed. The concept that allows us to grow food and fibre - while *keeping a natural balance* within the living environment is called ...
- A. ecological trust
  - B. sustainability (SF p. 132)**
  - C. eco-region
  - D. monoculture
30. When a farmer grows *only one type of plant* in a field it is considered a ...
- A. typical tillage style
  - B. uniform culture
  - C. monoculture (SF p. 140)**
  - D. specialized crop
31. The plough was invented in the Middle East and has been an important farming tool for over 5000 years. In the early 1900's a horse was used to pull a plough through the fields. With the technology of today, a *plough* is ...
- A. not needed
  - B. pulled by a large tractor trailer
  - C. pulled by a combine
  - D. pulled by a tractor (SF p. 141) Figure 2.46**
32. Healthy plants require large amounts of six nutrients. All of these nutrients have specialized functions. *Fertilizer* usually contains three of the six nutrients, including ...
- A. nitrogen, potassium, sulphur
  - B. phosphorus, sulphur, calcium
  - C. potassium, nitrogen, phosphorus (SF p. 155)**
  - D. magnesium, potassium, calcium

33. Many *farming practices* are used to save the soil from excess erosion. Planting '*shelter belts*' is one such practice. The purpose behind this is to ...
- A. provide travel corridors for water
  - B. enhance crop rotation
  - C. plant the seeds through the stubble
  - D. **reduce wind damage and trap snow (SF p. 159) Figure 2.64A**
34. *Insects, fungi and weedy plants* are the *pests* that cause the most damage to plants. Insects cause ...
- A. loss of moisture
  - B. infection
  - C. nutrients to become inactive
  - D. **plant loss due to consumption (SF p. 164)**
35. Trying to get rid of certain pests can be a problem. If a non-native species is introduced to a certain area, without natural predators, it often becomes a pest. One such example was the introduction of the Dandelion to North America from Europe. It was brought here as a ...
- A. **salad vegetable (SF p. 167)**
  - B. showcase flower
  - C. food source for cattle
  - D. medicinal crop
36. *Organic food* is food that has been grown without the use of chemical fertilizers and chemical pesticides. To provide the needed nutrients to grow the plants, they use ...
- A. **manure and compost (SF p. 172)**
  - B. tillage and crop rotation
  - C. mulching and companion planting
  - D. clean equipment and good seeds
37. *Herbicides, insecticides and fungicides* are used to control weeds, insects and fungus. The use of these pesticides caused another problem. They *build up over time* in the food chain and get stored in organisms, just as food energy is stored. This process is called...
- A. eco-manipulation
  - B. **bioaccumulation (SF p. 170)**
  - C. pesticide residue
  - D. chemical pollution
38. Salinization of the soil is just as troublesome as dry soil. The soil is less able to grow crops because of two factors, which are ...
- A. not enough moisture and too much vegetation
  - B. **too much moisture and not enough vegetation (SF p. 156)**
  - C. too much evaporation and too much vegetation
  - D. excess ground water and too much vegetation
39. The practice of cultivating land to control weeds, without planting crops is called ...
- A. fall tillage
  - B. **summer fallow (SF p. 157)**
  - C. spring irrigation
  - D. wintering crops
40. Pests are classified into four main types. These types of pests are problematic because they cause disease in crops. They are ...
- A. weeds
  - B. **fungi (SF p. 164)**
  - C. insects
  - D. bacteria

## Heat and Temperature

## Key

41. This type of *Thermal Energy* source can be used to cook food, but are hard to control, dangerous and messy.
- A. **open fires (SF p. 188) Figure 3.1A**
  - B. fireplaces
  - C. pioneer stove
  - D. modern gas stove

42. *New technologies* have been developed to provide thermal energy, without scorching your body. One of these has micro sensors that work like invisible thermostats, that measure the temperature of different parts of your body and generates thermal energy accordingly. This technology is ...
- A. still in the development stage
  - B. found only in research labs
  - C. an electric blanket (SF p. 190) Check out Cool Tools**
  - D. thermal underwear
43. *Estimating temperature* is something that we do automatically. Touching something to see how hot or cold it is one technique that we use. Another is to ...
- A. use a thermometer
  - B. look at the moving particles
  - C. observe the color (SF p. 192) Welders and glass blowers use the color of the flame to know when it is hot enough to soften metal or glass**
  - D. use the back of your hand
44. Because your senses can easily be fooled, thermometers were developed, because they are more reliable. The *earliest thermometers* contained a glass bottle with a long glass tube for the liquid to rise and fall. An important part was missing though. It was the ...
- A. type of liquid that senses temperature change
  - B. type of glass that doesn't expand
  - C. the calibrated scale of relative temperatures (SF p. 194) Read the first sentence on this page**
  - D. the protective stoppers to prevent the liquid from escaping
45. A *material*, which is affected by changes in some feature of the environment, such as temperature is called a ...
- A. circuit
  - B. sensor (SF p. 199) a sensor is a material which is affected by changes in temperature**
  - C. signal
  - D. responder
46. Recording thermometers are called *thermographs*. The 'temperature writer' uses a rotating drum to record changes in temperature. Tiny movements of this device can make large movements of the recording instrument. The device which makes these tiny movements is the ...
- A. lever
  - B. pen
  - C. bimetallic strip (SF p. 200) Figure 3.11 The bimetallic strip responds to changes in temperature**
  - D. rotating drum
47. The *Particle Model of Matter* helps to explain ideas about Thermal Energy. This model includes each of the following points EXCEPT ...
- A. all substances are made up of tiny particles that are too small to see
  - B. the particles are always in motion
  - C. the particles increase their energy output when they collide (SF p. 203) Top of the page lists the three most important ideas about the particle model**
  - D. the particles have spaces between them
48. *Energy* is the measure of something's ability to do work. Which of the following has the *least* thermal energy?
- A. a 12 Volt car battery
  - B. a 7-11 slurpee (SFt p. 204) A 'cold' substance has less energy than a warm or hot one**
  - C. a cup of hot coffee
  - D. a warm swimming pool
49. Which of the following energy transfers would be correct?
- A. thermal energy in a hot drink is transferred to cold hands (SF p. 205) Thermal energy is transferred from high energy source to something with low energy**
  - B. thermal energy is transferred from a room to a heater, so it can be heated
  - C. an ice cube loses thermal energy when it melts in hot lemonade
  - D. thermal energy is lost by a match when it is lit
50. When a substance is heated the particles gain energy and spread out, creating more volume (spaces between the particles. So what about *the mass* of the substance? What happens to the mass of a substance when it is heated?
- A. mass increases
  - B. mass decreases
  - C. mass remains the same (SF p. 210) Thermal energy does not have mass or volume and therefore the mass of the substance remained the same**
  - D. mass is lost

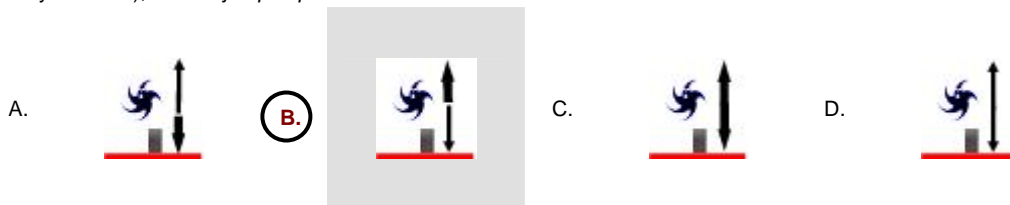
51. An experiment testing the affect of heat on different liquids was performed by some students. Which of the following variables would have been the *manipulated variable*.
- A. the amount of heat used
  - B. the size and type of glass tubing each liquid would rise
  - C. the different types of liquids (SF p. 216) This is what you are testing**
  - D. the different levels each of the liquids reached in the glass tubing
52. When a substance undergoes a change of state, energy is involved. Which change of state involves a release of energy?
- A. melting
  - B. sublimation (SF p. 220) Figure 3.18**
  - C. evaporation
  - D. fusion
53. As high-energy particles escape from the surface of a liquid, by evaporation, the remaining liquid cools. This surface cooling phenomenon is described by scientists as ...
- A. evaporative cooling (SF p. 221) Evaporation cools the liquid**
  - B. subliminal cooling
  - C. fusion
  - D. condensed evaporation
54. During a phase change, the temperature remains the same, so the particles have ...
- A. less average energy
  - B. more average energy
  - C. the same average energy (SF p. 224) When the temperature remains the same, the average energy of the particles remains the same**
  - D. a faster speed
55. *Radiation* is the transfer of energy without any movement of matter. This type of energy transfer is called ...
- A. radioactive induction
  - B. radioactive transfer
  - C. electro-spectrum radiation
  - D. electromagnetic radiation (SF p. 226) EMR is electro-magnetic radiation**
56. A certain type of thermal energy transfer moves the energy by *direct collisions*, particle-to-particle. This type of thermal energy transfer is called ...
- A. concurrent
  - B. conduction (SF p. 229) Figures 3.24A, 3.24B, 3.24C**
  - C. conduit
  - D. convective
57. Energy systems have five things in common - *input energy*, *energy transfer*, *output energy*, *waste energy* and ...
- A. collisions between particles
  - B. energy source (SF p. 232) There must be an energy source to provide the system with energy**
  - C. energy equilibrium
  - D. concentrated flow
58. Thermal energy from inside the Earth's crust can be harnessed as a useful thermal energy source. Volcanoes, hot springs and geysers are example of this type of thermal energy source. This type of thermal energy is ...
- A. an environmental pollutant
  - B. a clean alternative to using fossil fuels (SF p. 241) Geothermal energy is clean, and the power plants that convert it to electrical energy are reliable**
  - C. called geovolcanic energy
  - D. used to generate fossil fuel resources
59. *Co-generation* is the use of ...
- A. electrical energy to get waste energy
  - B. waste energy to generate electrical energy (SF p. 247) Cogeneration uses waste energy to generate electricity**
  - C. waste energy to generate mechanical energy
  - D. mechanical energy to generate waste energy
60. An **ENERGUIDE** label is found on most household electrical appliances and tells the consumer how much electricity is ...
- A. needed to run the appliance
  - B. used running the appliance (SF p. 252) Figure 3.42**
  - C. wasted by the appliance
  - D. generated while running the appliance

# Structures and Forces

## Key

61. The following are examples of *natural mass structures* ...
- A. dams and mountains
  - B. brick walls and coral reefs
  - C. ice sculptures and sand castles
  - D. mountains and coral reefs (SF p. 272)**
62. *How a structure is put together*, how it is shaped and the types of materials that are used to build it are all part of the structure's ...
- A. design (SF p. 272) 1st paragraph**
  - B. function
  - C. classification
  - D. stability
63. '*Crush It*' was an investigation activity that tested the strength of a shell structure. The responding variable in this activity was ...
- A. How much weight the shell could hold before it failed. (SF p. 302) The weight of the mass of books is what we were trying to find out**
  - B. How much mass the shell could hold before it failed.
  - C. How long the shell performed its function.
  - D. How many different textbooks were used as weights.
64. *Containing, sheltering, transporting, lifting* ... are all words to describe a structure's
- A. design
  - B. stability
  - C. function (SF p. 283) Word Connect**
  - D. aesthetics
65. When a structure is *built to withstand loads* - more than it normally would carry - the structure is built with a larger ...
- A. foundation
  - B. symmetrical base
  - C. set of pilings
  - D. margin of safety (SF p. 285)**

66. Which force diagram shows what happens with a very active *Weepic* (remember that a WeePic is an imaginary fantasy creature), *while it jumps up and before it has cleared the wall*?



(Before the Weepic has cleared the wall, the momentum force, needed by the Weepic to clear the wall, is **larger** - to overcome the force of gravity)

67. When *choosing the most suitable materials* to build a structure, architects, engineers and designers should consider all of the following before making their final choice ...
- A. cost, appearance, environmental impact, energy efficiency (SF p. 288-289)**
  - B. cost, color, life expectancy, impact strength
  - C. environmental appearance, type of symmetry, type of joints needed, cost effectiveness
  - D. flexibility, impact strength, energy efficiency, color
68. *Mobile joints* are used to secure materials together in a structure. All of the following joints are examples of mobile joints (allowing movement in a structure) EXCEPT ...
- A. a trailer hitch
  - B. photocopier lid
  - C. ball and socket joint (shoulder)
  - D. 'Lego' bricks (SF p. 290) Lego doesn't move than the pieces snap together**



69. 'Running bond' is a pattern used for strength in ...
- dams
  - brick walls (SF p. 272) Figure 4.4**
  - beaver dams
  - omelets
70. The *change in the shape or size* of a structure can be due to internal forces which are produced by external forces acting on the structure and are called ...
- structural instability
  - dead loads
  - live loads
  - deformation (SF p. 305) The change in shape or size of the structure is called deformation.**
71. *Bend or twist* a certain material, by pressing on different parts, in different directions, at the same time. The force you are creating is called ...
- tension force
  - compression force
  - shear force (SF p. 307) Figure 4.36 shows the different types of internal forces which can act on a structure. The shear forces bend or tear a material by pressing different parts in different directions at the same time.**
  - torsion force
72. A *hurricane or tornado* is an example of a force that can cause extreme damage to a structure when it acts on the structure, even for a short time. The environmental event is classified as a ...
- live load (SF p. 307) A changing or non-permanent force acting on a structure**
  - dead load
  - deformation
  - torsion event
73. Structures *fail* for a number of reasons. Engineers study failed structures so they can design stronger, more durable structures. A flagpole that has been blown over in a strong wind happens because of the increased force that is applied to the ...
- 
- entire structure
  - entire base
  - opposite side of the flagpole's base (SF p. 315) The wind makes the flagpole act like a lever and the effort force is increased on the opposite side - Figure 4.41**
  - same side of the flagpole's base
74. When a solid material is compressed, small *microscopic cracks* in the material can enlarge or break apart. This can cause one section of the material to break away from the other part. This action is called ...
- bend
  - buckle
  - shear (SF p. 315) Figure 4.43 One section may shear away**
  - twist
75. *Crash test dummies* are used by auto safety designers and inspectors to identify impact points when material fails in a collision. When the car is rammed into a solid wall, the front end buckles. This happens to better protect the Crash test dummies (us) in a real accident. The metal deforms because of the energy it absorbs in the impact. Designers ...
- do this on purpose to ensure the material buckles. (SF p. 317) Designers do this on purpose to ensure that the metal buckles in the right places to absorb most of the collision force.**
  - identify the weaknesses and try to fix them.
  - determine what materials buckle the least.
  - identify where the front end need more reinforcement.
76. *Metal fatigue* happens because metal is ...
- too old to be used any more
  - not made properly
  - bent or twisted over and over again (SF p. 318) When the metal is bent or twisted over and over again it weakens (small cracks get larger), causing metal fatigue and eventually failure.**
  - exposed to extreme conditions
77. Designers generally use *three key methods* to help structures withstand forces. They include all of the methods below, **EXCEPT** for ...
- distribute the load evenly
  - direct the forces along angled components
  - shape the parts for the forces they are likely to face
  - place lighter materials above heavier materials (SF p. 321) This might make sense, but it is not one of the three principles which guide structural design.**

78. Science fiction often gives us exciting ideas about materials that can withstand almost any force. In reality, the perfect material has not been discovered yet. One material (if it could be made the thickness of a pencil - could stop a 747 jet). It is currently being *synthetically developed* and will have widespread use because of its strength. The material is known as ...
- A. Kelvar®
  - B. spider silk (SF p. 313) Check out the Did You Know**
  - C. industrial bamboo
  - D. rice grain
79. Remember when you put your hands on your desk and put all your weight on them - then tried to move them forward? This demonstration was used to identify that your hand (much like a structure) resists movement forward because of ...
- A. static forces
  - B. kinetic forces
  - C. external forces
  - D. frictional forces (SF p. 326) You are feeling the force of friction, which resists movement between two surfaces that rub together.**
80. A firm *foundation* is necessary to support a structure. Solid ground is not always firm and stable. There are environmental and man-made conditions which make the soil loosen and become compact, which makes the soil relatively unstable. *Three strategies* are use to ensure a structure is built on a firm foundation. The three strategies include all of the following, **EXCEPT** ...
- A. find something solid
  - B. make a soil layer
  - C. spread the load
  - D. utilize pressure and density (SF p. 337) To create a firm foundation this is not identified**

## Planet Earth

## Key

81. Alfred Wegner's *Theory of Continental Drift* determined that the continents at one time all fit together to form one large super continent, called Pangaea.. His evidence was their interlocking shapes and ...
- A. discovery of land bridges connecting the continents
  - B. different trees on different continents
  - C. lower ocean level with islands close together
  - D. similar fossil remains found on different continents (SF pgs. 383-384) Wegener studied the fossil evidence**
82. Daughter material and parent material refer to the *half-life* parts remaining, in the process of *radiometric dating*, to calculate *the absolute age of rocks*. If the daughter material is 75% and the parent material is 25%, the rock has undergone ...
- A. 1 half-life
  - B. 2 half-lives (SF p. 424) Figure 5.84 ... 2 half-lives is 75% daughter and 25% parent**
  - C. 3 half-lives
  - D. 4 half-lives
83. Minerals can be identified by using their *physical properties*. The property that identifies the way the mineral breaks is called its ...
- A. cleavage (SF p. 357) When a mineral is broken apart, its cleavage describes how it breaks.**
  - B. streak
  - C. colour
  - D. lustre
84. While Allison and Rachel were investigating the banks of the river, they discovered a large section that had been eroded away. They were actually observing *stratification*, which identifies ...
- A. fossils embedded in the rock
  - B. visible layers of different soil types (SF p. 364) Figure 5-10 - The arrangement of sediments in visible layers.**
  - C. soil minerals that have leached
  - D. petroleum traces in the soil
85. A fertile soil is one that can supply nutrients for plant growth. To identify the *different layers* in a particular type of soil, a geologist would look at the ...
- A. organic components
  - B. mineral content
  - C. humus content
  - D. soil profile (SF p. 372) The soil profile (different soil layers) illustrates how the soil types are divided.**

86. *Weathering* can cause catastrophic changes all of a sudden. When water gets into cracks in rock and expands, the rock can break away. The *Frank Slide*, in the Crownsnest Pass, is an example of how this can happen. This form of weathering is called ...
- winter weathering
  - frost wedging (SF p. 373) Figure 5.31**
  - gravitational thrust
  - solidification
87. On a field trip to the foothills, the students noticed a tree's roots growing through rock. This *type of weathering* is classified as ...
- physical
  - biological (SF p. 374) The tree is a living organism which can cause the breakdown of rock.**
  - mechanical
  - chemical
88. *Kidney stones* are examples of ....
- mineral deficiency
  - vitamin deficiency
  - lack of calcium in the bones
  - growing crystals in your body (SF p. 356 - Off the Wall) An excess of chemicals in your body become concentrated in the kidneys, where kidney stones can be produced.**
89. When scientists discovered the ridges along the ocean floor, they also found lava coming out of the cracks. This *type of lava* is called ...
- pillow lava (SF p. 389) Alvin made it possible to see lava coming out of the cracks in the sea floor. Figure 5.42 Because it cools so quickly, it is called *pillow lava*.**
  - ocean lava
  - saltwater lava
  - sea-floor lava
90. The *San Diego Zoo* is able to get early warnings of possible earthquakes because ...
- they have the best seismic equipment
  - animals can sense the start of an earthquake (SF p. 395) Because animals have often thought to 'predict' earthquakes the Zoo would most likely be the best place to provide an early warning.**
  - scientists believe this area will be hit first
  - they are directly over the most active fault
91. Wegener proved that glaciers once existed in the southern hemisphere. He used this glacial feature to provide his evidence ...
- moraines found
  - erratics found
  - bedrock abrasions (SF p. 385) Under the ancient glacial deposits, there were grooves (abrasions) in the bedrock, showing the direction in which the glaciers moved.**
  - ice caves
92. The pressure under the earth's crust can cause *tectonic plates* to move in different ways. A *fault* that causes these plates to move sideways is called a ...
- transform fault
  - reverse fault
  - normal fault
  - strike-slip fault (SF p. 403) In this type of fault, rock shears causing the tectonic plates to move sideways.**
93. There are a number of *volcanoes* that border the outer edges of the Pacific Ocean and are known as ...
- Hell's Kitchen
  - Ring of Fire (SF p. 410) Most volcanoes in the Ring of Fire occur at subduction zones.**
  - Rapid Change Zone
  - Circle of Death
94. An earthquake or an erupting sea-floor volcano can cause a '*Tsunami*'. In *Japanese* it means ...
- lava flow
  - harbour wave (SF p. 405) 32,000 people died when tsunamis were triggered by the eruption of Krakatau**
  - ash plume
  - shaking ground
95. When sedimentary rock is squeezed from the sides and is too brittle to fold, it can break and form into slabs that *move up and over* each other. This is an example of ...
- a diverging fault
  - folded layering
  - a sliding fault
  - a thrust fault (SF p. 413) Just like shingles on a roof (the Canadian Rockies are an example of thrust faulting)**

96. There are many different aspects and actions that geologists can test to accurately determine the age of a mountain. This aspect might be the best way for an untrained geologist to determine the age of a mountain.
- A. syncline
  - B. anticline
  - C. kinds of rocks
  - D. **shape of peak (SF p. 414)** The amount of wearing down of a mountain indicates its relative age, so the shape is the factor you should use.
97. *Trilobites* are one of the most famous groups of fossils. They are now extinct. They lived in ...
- A. **warm ocean water (SF p. 418) Figure 5.74** They lived in warm ocean water and are now extinct.
  - B. fresh water lakes
  - C. Gobi Desert
  - D. Antarctic Tundra
98. When an organism is buried under many layers of sediment, pressure and heat build up, leaving a thin film of carbon residue forming the outline of the organism on the rock surface. This residue is called ...
- A. **carbonaceous film (SF p. 418)** The outline is called a carbonaceous film
  - B. carbon-dated remains
  - C. petrified residue
  - D. trace fossil residue
99. *Metamorphic* rock is formed as a result of ...
- A. rapidly decreasing temperatures
  - B. extreme temperature fluctuations
  - C. lower pressure and moisture
  - D. **high temperature and pressure (SF p. 366)** usually formed below the earth's surface when extremely high pressure and heat cause the original rock to change form
100. Identify the **epicenter** of a hypothetical earthquake using the information provided in the table below the map.

The epicenter of this earthquake is likely located near:

- A. Edmonton
- B. **Calgary** (Using the technique taught - with a compass – the circles intersect on or near Calgary)
- C. Regina
- D. Toronto