

Heredity & Genetics

The multi-disciplinary **Create-a-Centre** activities are keyed to Bloom's Taxonomy and include tasks from the six major classifications of the cognitive domain: knowledge, comprehension, application, analysis, synthesis and evaluation. Activities are designed to encourage creative learning and problem solving, and student investigations are intended to produce creative results. The teacher becomes a facilitator of learning and helps students plan and co-ordinate activities. He or she should be resourceful and involve other school staff, parents and mentors in the development of projects.

Create-a-Centre activities can be used for individual or group projects, as extension material or supplements to the regular curriculum. Learning centres should be set up within the classroom for each topic to focus and inspire students.

Level	Goals	Activity Design
Knowledge	Ability to recall facts, concepts or principles.	List, recognise, label, locate, describe, define, observe.
Comprehension	Ability to translate or interpret information. A grasp of meaning, intent, relationship is demonstrated in oral, written or non-verbal communication.	Explain, demonstrate, show, paraphrase, experiment, discover, illustrate, infer, predict.
Application	Ability to apply previously acquired knowledge or information to a new or concrete situation.	Organise, collect, summarise, order, record, classify, model, construct, relate, generalise, transfer, code, draw, reconstruct.
Analysis	Ability to break down material into its components so that organisational structure may be understood.	Take away, put together, formulate, deduce, compare, contrast, combine, solve, discriminate, take apart, fill.
Synthesis	Ability to analyse the parts and put them together to form a new whole.	Create, imagine, suppose, predict, assume, translate, hypothesise, design, derive.
Evaluation	Ability to make judgments based on evidence and determine the value of material based on definite criteria.	Appraise, interpret, judge, validate, justify, criticise assess, decide, defend, rate.

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DIRECTIONS FOR CREATING A LEARNING CENTRE

MATERIALS:

4 pieces of cardboard 72 cm x 56 cm
 Scissors
 Plastic or cloth tape
 Stapler

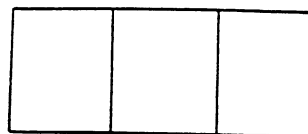


DIAGRAM A

1. Tape together the backs of the 3 pieces of cardboard. See Diagram A.

2. Use the 4th piece of cardboard to cut out pockets. Cut them to the following sizes:

2 - 23 cm x 29 cm
 7 - 14 cm x 21 cm

See Diagram B.

3. Staple the edges of the pockets to the cardboard, leaving the tops open. Cover the stapled edges with the plastic tape. The larger pockets will be used to hold puzzles and other information you may wish to make available. The smaller pockets will be used to hold the task cards. See Diagram C.

4. Label and decorate your centre with drawings and/or pictures from magazines. See Diagram C.

5. Cut out the task cards along the heavy black lines. Place them and the extra activities in the appropriate pockets.

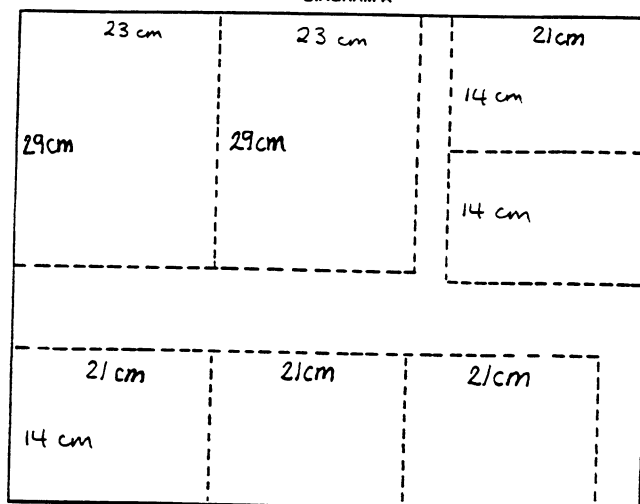


DIAGRAM B

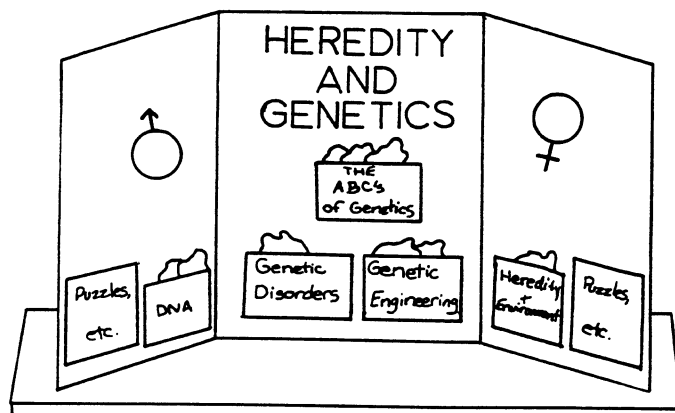


DIAGRAM C

ANSWERS TO CROSSWORD PUZZLE

RECESSIVE
 C N I
 HAEMOPHILIA TRAIT
 Y D C R
 B ENVIRONMENT O
 R L
 ALBINISM HUXLEY PAIRS
 L D K E
 D DARWIN U P
 OFFSPRING M A D HELIX
 U R U TRISOMY I
 S AMNIOCENTESIS M C
 T N A I O I A
 GENETICS T C N N T
 C R T I K C A ACID
 PHENOTYPE O L L N O
 R A E MENDEL O THYMINE
 O L A I N P E
 M GUANINE K R
 RECOMBINANT E B EUGENICS
 S B N E D
 O IDENTICAL MITOSIS
 CHIMERA S E D T
 E S GENOTYPE
 RESTRICTION A



Make a time line that shows major events in the science of genetics.

KNOWLEDGE



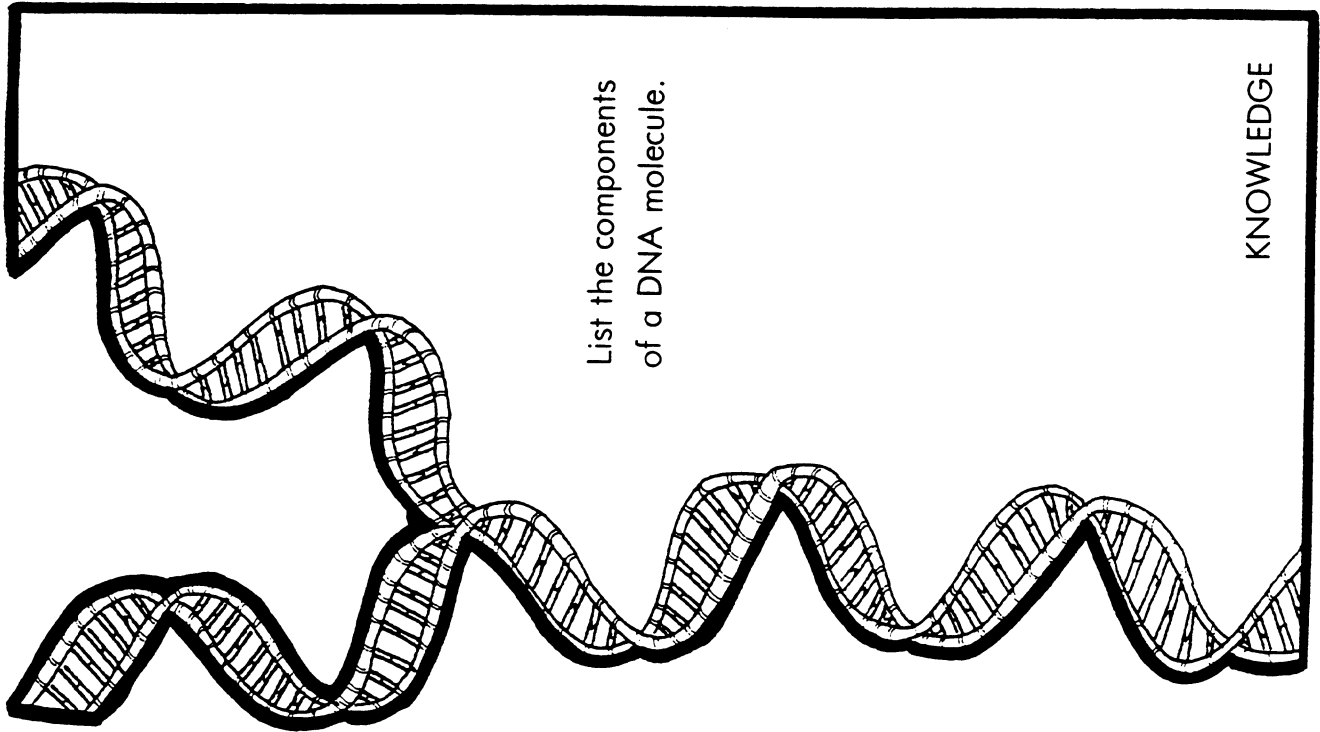
The ABC's of Genetics



Explain the difference between genotype and phenotype.
Draw a picture and/or chart to illustrate your explanation.

COMPREHENSION

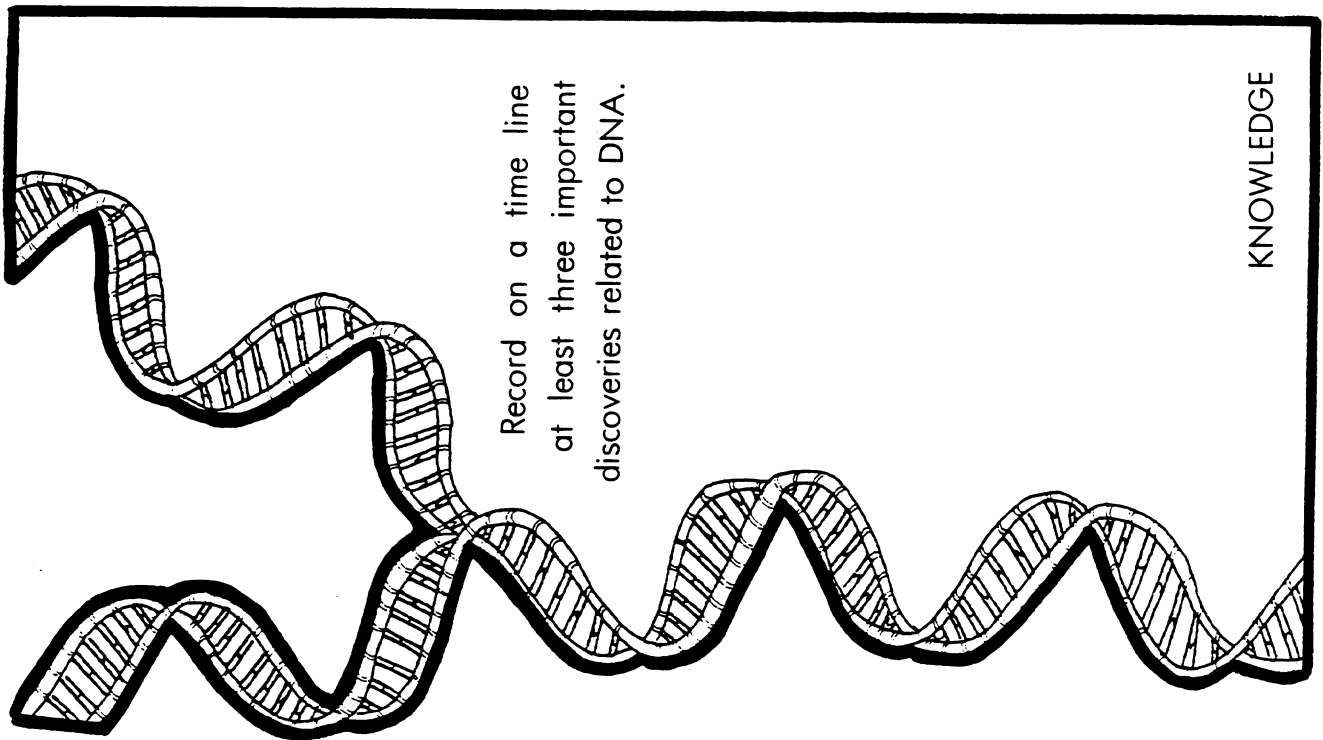




List the components
of a DNA molecule.

KNOWLEDGE

DNA



Record on a time line
at least three important
discoveries related to DNA.

KNOWLEDGE