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Follow the instructions below to design and draw a dog with its own genetic code.

Directions

1. Collect an envelope containing ‘Dog DNA’.

2. Pick one strip of paper from the envelope. This strip is the first piece of your dog’s DNA.

3. Match the pattern of letters on your dog DNA strip to one on the Dog traits key for ‘Body shape’. Circle the shape.

4. Set the piece of DNA aside for now.

5. Pick another strip of paper from the envelope. Match the letter pattern on that strip with the one for the second trait on the Dog traits key – i.e. ‘Head shape’ – and circle the matching head shape.

6. Tape the second piece of DNA to the first one to make one long strand. This will gradually build up to become the DNA code for your dog.

7. Repeat these steps for each of the six remaining traits on the Dog traits key.

8. When you have discovered all of your dog’s traits, draw your dog.

9. Put the picture of your dog and its DNA code up on the wall.

Questions

Look at the other dogs in the class.

1. Is your dog different from or the same as others?

2. Explain why your dog is different from all or most of the other dogs.

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Dog traits code

Before the activity, cut up all the codes and place them in an envelope.

|  |  |  |  |
| --- | --- | --- | --- |
| DNA code A | DNA code B | DNA code C | DNA code D |
| **T A G C** | **C A G T** | **A C T G**  | **G T C A**  |
| **T A G C** | **C A G T** | **A C T G** | **G T C A** |
| **T A G C** | **C A G T** | **A C T G** | **G T C A** |
| **T A G C** | **C A G T** | **A C T G** | **G T C A** |
| **T A G C** | **C A G T** | **A C T G** | **G T C A** |
| **T A G C** | **C A G T** | **A C T G** | **G T C A** |
| **T A G C** | **C A G T** | **A C T G** | **G T C A** |
| **T A G C** | **C A G T** | **A C T G** | **G T C A** |

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Dog traits key

|  |
| --- |
| **Body shape** |
| Small, thin, long straight |  | Large, thin, long, tapered |  | Medium, muscular, short |  | Large, muscular, straight |
| A C T G |  | C A G T |  | T A G C |  | G C T A |
|  |  |  |  |  |  |  |
| **Head shape** |
| Long, thin  |  | Short, flat  |  | Long, wide |  | Short, thin |
| A C T G |  | C A G T |  | T A G C |  | G C T A |
|  |  |  |  |  |  |  |
| **Ears** |
| Small, pointed up |  | Large, droopy |  | Medium, droopy |  | Small, pointed down |
| A C T G |  | C A G T |  | T A G C |  | G C T A |
|  |  |  |  |  |  |  |
| **Legs** |
| Long, thin |  | Long, muscular |  | Short, thin |  | Short, chunky |
| A C T G |  | C A G T |  | T A G C |  | G C T A |
|  |  |  |  |  |  |  |
| **Eyes** |
| Dark brown  |  | Blue  |  | Light brown |  | Green  |
| A C T G |  | C A G T |  | T A G C |  | G C T A |
|  |  |  |  |  |  |  |
| **Tail** |
| Long with short hair |  | Very small |  | Long and bushy |  | Curled up on body |
| A C T G |  | C A G T |  | T A G C |  | G C T A |
|  |  |  |  |  |  |  |
| **Coat colour** |
| Black |  | Brown |  | White  |  | Black and white |
| A C T G |  | C A G T |  | T A G C |  | G C T A |
|  |  |  |  |  |  |  |
| **Hair** |
| Curly, short |  | Straight, short |  | Straight, long |  | Wavy, long |
| A C T G |  | C A G T |  | T A G C |  | G C T A |