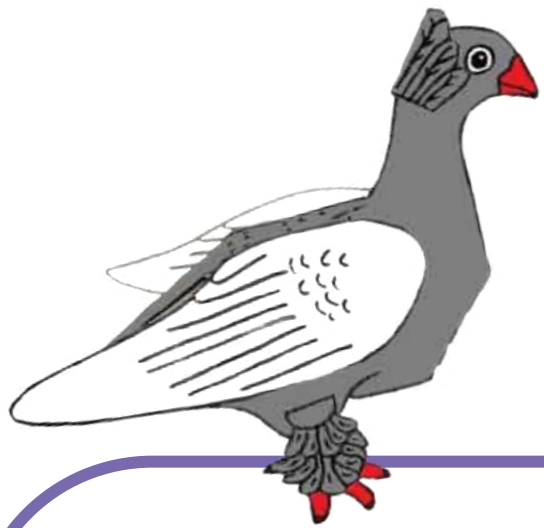
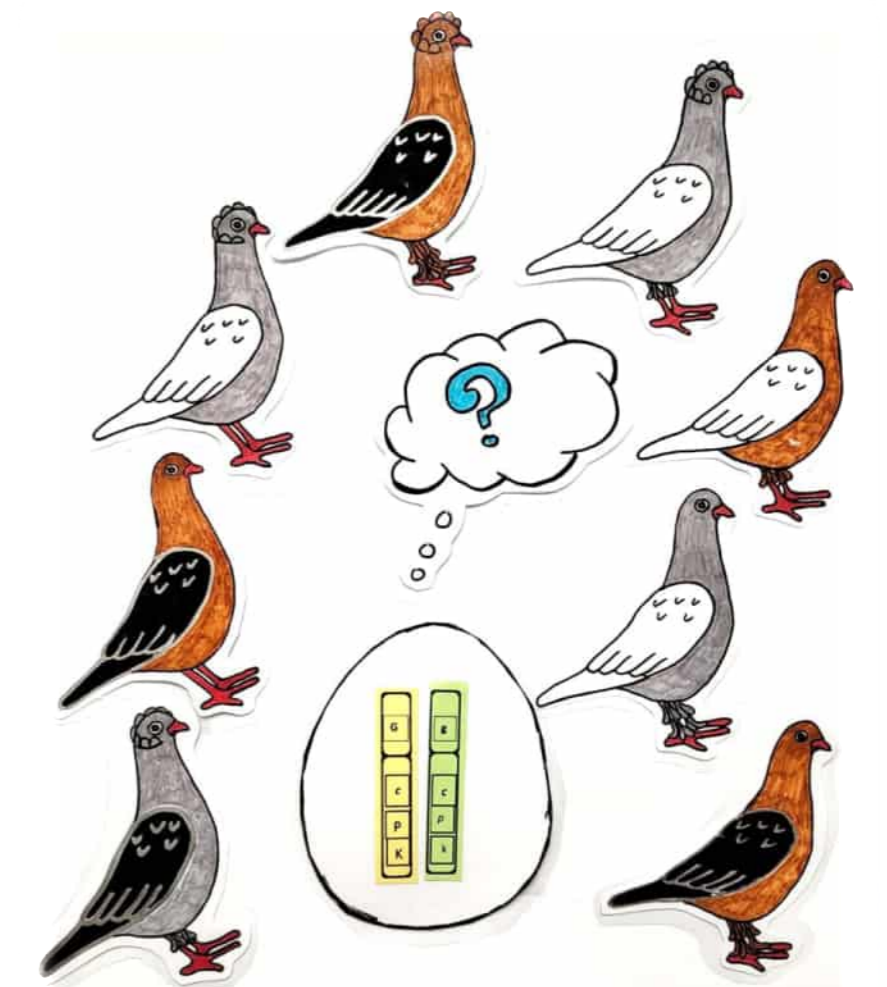


Vesna Hlavati Širka | Secondary school Stevica Jovanović | Pančevo | Serbia

Pigeon Genetics



The Pigeon Genetics project was created so that students can understand how different combinations of genes lead to the expression of different traits with hands-on activities. The inheritance of pigeon traits had to be simplified in order to adapt to students' age and students' learning level.



Student worksheet on Pigeon Genetics, Sixth grade, Vesna Hlavati Širka

The pigeon is a bird that we see and you have noticed how different they can be. With this exercise, you will discover what combinations of genes they can produce different offsprings.

Instructions:

- pull out mother's genes (yellow) and father's genes (green) and put them together;
- write down the traits (e.g. Gg, gg or GG);
- couple the genes (dominant and recessive genes) (e.g. Cc, Cc, cc different combinations of recessive and dominant genes);
- from Table 2, read the trait in Table 1;
- colour the pigeons' slipper foot feathers according to the inherited traits (e.g. crest or no crest, slipper foot feathers).

Traits	Genes from mother	Genes from father	INHERITED TRAITS (read from Table 2)
Body colour (G or g)	G	g	Grey body
Crest (C or c)	c	c	Crest
Foot feathering (P or p)	P	p	Half leg feathers
Wing colour (K or k)	K	k	Black wing

Genes	Inherited trait
GG or Gg	Grey body
gg	Brown body
CC or Cc	No crest
cc	Crest (draw the crest)
PP	Slipper foot feathering (draw feathers over the entire legs)
Pp	Half leg feathers (draw feathers half way down legs)
pp	No leg feathers
KK or Kk	Black wings (colour the wing)
kk	White wings

Table 1 SpEd

Inherited traits
Choose a or b and then colour the pigeons' body.

a. Grey body b. Brown body

Choose a or b and then draw the inherited trait.

a. No crest b. Draw the crest

Choose a, b or c and then draw the inherited trait.

a. Draw the feathers over the entire legs

b. Draw the feathers half way down legs

c. No leg feathers

Choose a or b and then colour the wing.

a. Black wing b. White wing

Choose a or b and then colour the eye.

a. Red eye b. Brown eye



Pigeons have two copies of each chromosome (from mother and father). Each parent can make gametes with many possible gene combinations, hence offspring gets a unique set of genes and a unique set of inherited traits.

Conclusion

Students learn about the inherited traits based on the gene combination, draw and colour the traits and make the pigeon out of the paper model.

