LESSON
WOW INHERITANCE

AUTHOR
CAMILLA EGHOLM SØRENSEN
VUC STORSTRØM

WOW INHERITANCE

This excercise trains basic Mendelean single gene inheritance - but with a World of Wordcraft twist.

Subject and level
Biology - upper secondary school

Connection to curriculum
The excercise requires a basic understanding of the principle single gene inheritance and X-bound inheritance.

Didactic and pedagogic considerations
The students must be familiar with the terms; allele, genotype, phenotype, homozygous, heterozygous, dominant and recessive genes and co-dominance.

Time estimate
1-2 hours depending on student skill level

Group size
Individual or in pairs

Overall introduction to exercise
The students must determine the outcome of different pairings given the genetic information of the parents.

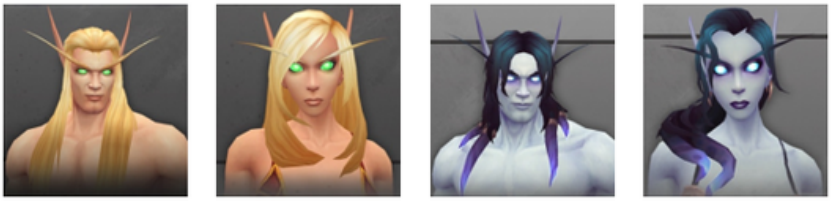
WOW INHERITANCE

Exercise as presented to the students

Genetic traits can be inherited in different ways. In this assignment, you will find out how characteristics such as eye, skin and hair color are inherited in different imaginary scenarios. If a blood elf has children with a void elf, the children will end up looking different depending on how the different phenotypes are inherited.

For all scenarios, the following fictitious rules apply;

- Hair colour is given by the allele "H" with the phenotypes "black" and "blonde"
- Skin colour is given by the allele "S" with the phenotypes "blue" and "fair"
- Eye colour is given by the allele "E" with the phenotypes "blue" and "green"
- The parents have the phenotypes shown in the pictures and are all homozygous for all traits.



For each of the conditions below, you need to determine which possible genotypes and phenotypes will occur and what the ratio between them is.

- If the traits "blond hair", "fair skin" and "green eyes" are inherited recessively, what would be the outcome of a mating between a blood elf and a void elf? (1st generation)
- What will be the outcome of a mating between the offspring? (2nd generation)
- What will be the outcome if "green eyes" are inherited dominantly while the rest remain the same? Set up the answer for both the 1st and 2nd generation.
- If the hair colours "black" and "blonde" are co-dominant, what will be the results? Again list the answer for both generations.

If the skin colour "blue" is recessively bound to the X-chromosome, what skin colour will the children have if the mother is a blood elf and the father is a void elf? What skin colour would they have if it were the other way around? NB! Assume that the female blood elf is heterozygous.

EASIE
Esports as Accelerator for Social Inclusive Education

E-SPORT AS ACCELERATOR FOR SOCIAL INCLUSIVE EDUCATION

WWW.EASIE.GG

Co-funded by the European Union

FUNDED BY THE EUROPEAN UNION. VIEWS AND OPINIONS EXPRESSED ARE HOWEVER THOSE OF THE AUTHOR(S) ONLY AND DO NOT NECESSARILY REFLECT THOSE OF THE EUROPEAN UNION OR THE EUROPEAN EDUCATION AND CULTURE EXECUTIVE AGENCY (EACEA). NEITHER THE EUROPEAN UNION NOR EACEA CAN BE HELD RESPONSIBLE FOR THEM.