 Provinsie van

OOSKAAP

ONDERWYS

**DIREKTORAAT SENIOR KURRIKULUM BESTUUR**

**(SEN-FET)**

**TUIS ONDERRIG SELF-STUDIE WERKSKAART ANTWOORDBLAD**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **VAK** | LEWENSWETENSKAPPE | **GRAAD** | 12 | **DATUM** | 02 April 2020 |
| **ONDERWERP** | Monohibriede Kruisings en Soorte dominansies | **KWARTAAL 1**  **HERSIENING** |  | **KWARTAAL 2 INHOUD** | 🗸 |

WERKSKAART GENETIESE TERMINOLOGIE - Les 1

|  |  |  |
| --- | --- | --- |
| 1.1.1 | ‘n Alleel is ‘n alternatiewe vorm van ‘n geen wat op dieselfde lokus van homoloë chromosome gevind word.🗸 | (1) |
| 1.1.2 | Fenotipe is die uiterlike voorkoms van ‘n organisme wat deur die genotipe bepaal word. Genotipe is die genetiese samestelling van ‘n organisme🗸 | (2) |
| 1.1.3 | Bruin oog kleur🗸, Krulhare🗸 | (2) |
| 1.1.4 | Dd🗸 | (1) |
| 1.1.5 | bb✓ | (1) |
| 1.1.6 | * Slegs die eienskap✓ * deur dominante alleel beheer✓ * kan in die uiterlike voorkoms gesien word✓ * vir ‘n individu met ‘n heterosigotiese genotipe✓ * Die dominate alleel vir krulhare✓ * onderdruk die voorkoms van die eienskap✓ wat deur die resessiewe alleel, wat reguithare is✓, Enige 4 | (4) |
| 1.1.7 | DD✓/ Dd | (1) |
| 1.1.8 | * ‘n Resessiewe alleel vir reguithare word deur die individu oorgerf ✓ * vanaf elke ouer✓.   **OF**   * In elke somatiese sel van die individu dra beide die homoloë chromosome ✓ * die resessiewe allele vir reguithare ✓ by dieselfde lokus, * daar is geen dominate alleel vir krulhare nie✓ Enige 2 | (2) |

**LEERDER AKTIVITEIT: MONOHIBRIEDE KRUISINGS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | P1 | Fenotipe | | Bruin | | x | Blou🗸 | |  | Genotipe | | Bb | | x | bb🗸 | | *Meiose* |  | |  | |  |  | |  | G/gamete | | B , b | | x | b, b🗸 | | *Bevrugting* |  | |  | |  |  | | F1 | Genotipe | | Bb ; Bb ; bb ; bb🗸\* | | | | |  |  | |  | | | | |  | Fenotipe | | 1 bruin : 1 blou🗸\* | | | | | P1 en F1🗸 |  |  | |  | | | | Meiose en bevrugting🗸 | | | | 2 Verpligte + Enige 4 | | |   **OF**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | P1 | Fenotipe | Bruin | | x | Blou🗸 | |  | Genotipe | Bb | | x | bb🗸 | |  |  |  | | | | | *Meiose* |  | |  |  |  | | --- | --- | --- | | Gamete | B | b | | b | B b | b b | | b | B b | b b |   1 punt vir korrekte gamete  1 punt vir korrekte genotipes\* | | | | |  |  | | *Bevrugting* |  | |  |  | |  |  |  | | | | | F1 | Fenotipe | 1bruin : 1 blou🗸\* | | | | | P1 en F1🗸 |  |  |  | | | | Meiose en bevrugting🗸 | | | 2 Verpligte + Enige 4 | | | |  | | | | | | | (6)  (6) |

|  |  |  |  |
| --- | --- | --- | --- |
| 2.1 | Haas 2 - Swart🗸pels Haast 4 - wit🗸pels |  | (2) |
| 2.2 | 1BB: 2BB: 1bb🗸 |  | (1) |
| 2.3 | 12🗸swart |  | (1) |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | P1 | Fenotipe | | Swart | | x | Swart🗸 | |  | Genotipe | | Bb | | x | Bb🗸 | | *Meiose* |  | |  | |  |  | |  | G/gamete | | B , b | | x | B, b🗸 | | *Bevrugting* |  | |  | |  |  | | F1 | Genotipe | | BB ; Bb ; Bb ; bb🗸 | | | | |  |  | |  | | | | |  | Fenotipe | | (3) swart : (1) wit🗸 | | | | | P1 en F1🗸 |  |  | |  | | | | Meiose en bevrugting🗸 | | | | Enige 6 | | |   **OF**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | P1 | Fenotipe | Swart | | x | Swart🗸 | |  | Genotipe | Bb | | x | Bb🗸 | |  |  |  | | | | | *Meiose* |  | |  |  |  | | --- | --- | --- | | Gamete | B | b | | B | BB | Bb | | b | Bb | bb |   1 punt vir korrekte gamete  1 punt vir korrekte genotipe | | | | |  |  | | *Bevrugting* |  | |  |  | |  |  |  | | | | | F1 | Fenotipe | (3) swart ; (1) wit🗸 | | | | | P1 en F1🗸 |  |  |  | | | | Meiose en bevrugting🗸 | | | Enige 6 | | | |  | | | | | | | (6)  (6)  (16) |

**ONDERWYSERS KOPIE: MEMORANDUM SOORTE DOMINANSIES**

1. Bestudeer die diagramme hieronder en beantwoord die vrae:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | |  | | Sleutel: Swart vis (B) x Grys vis (G) | | |  |  | | --- | --- | | **Soort dominasie** | Kodominansie🗸 (1) | | **Beskrywing** | Beide grys en swart kom in die fenotipe van die nageslag voor🗸, daarom is beide allele (grys en swart) ewe dominant🗸 (2) | | **Kruising** | P1 fenotipe Swart vis x Grys vis🗸  Genotipe BB x GG🗸  Meiose  Gamete B, B x G, G🗸  Bevrugting   |  |  |  | | --- | --- | --- | |  | B | B | | G | BG | BG | | G | BG | BG |   F1 genotipe BG, BG, BG, BG🗸  fenotipe Almal swart en Grys 🗸  P1+ F1🗸  Meiose + Bevrugting🗸 (Enige 6) | |  |  | |
| |  | | --- | |  | | Sleutel: Rooi voël (A) x Blou voël (a) | | |  |  | | --- | --- | | **Soort dominansie** | Volledige dominansie🗸 (1) | | **Beskrywing** | Rooi word deur (A) voorgestel en blou deur (a) 🗸, wat aandui dat rooi die dominate alleel is en blou die resessiewe alleel is🗸  **OF**  alle nageslag is Aa🗸 wat aandui dat (A) wat rooi aandui die dominante alleel is en (a) wat blou verteenwoordig die resessiewe alleel is.🗸 (2) | | **Kruising** | P1: Fenotipe Rooi voël x Blou voël🗸  Genotipe **AA** x **aa**🗸  Meiose  Gamete **A, A**  x **a, a**  Bevrugting   |  |  |  | | --- | --- | --- | |  | **A** | **A** | | **a** | **A a** | **A a** | | **a** | **A a** | **A a** |   F1 genotipe Aa🗸  Fenotipe almal rooi🗸  P1 + F1🗸  Meiose + Bevrugting🗸 (6)  GEEN PUNTE VIR GAMETE EN GENOTIPE OMDAT DIT ALREEDS GEGEE IS IN DIE VRAAG  **LET WEL:**  Homosigoties dominant x homosigoties resessief => alle nakommelinge is heterosigoties dominant | |
| |  | | --- | | wit  rooi    pienk | | Sleutel: Rooi blom (R)x Wit blom (W) | | |  |  | | --- | --- | | **Soort dominansie** | Onvolledige dominasie🗸 | | **Beskrywing** | ‘n Wit blom gekruis met ‘n rooi blom lewer ‘n pienk blom🗸 (‘n Alternatiewe fenotipe) wat aandui dat nie een van die twee allele m.a.w rooi en wit is dominant oor die ander🗸 | | **Kruising** | P1: Fenotipe Rooi blom x Wit blom🗸  Genotipe **RR** x **WW**🗸  Meiose  Gamete **R, R**  x **W, W**🗸  Bevrugting   |  |  |  | | --- | --- | --- | |  | **R** | **R** | | **W** | RW | RW | | **w** | RW | RW |   F1 genotipe 100% RW🗸  Fenotipe Almal Pienk 🗸 (Enige 6) | |

**EKSAMEN TIPE VRAE**

VRAAG 2.4 V2 NOV 2018

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2.5 | 2.5.1 | Pers🗸 |  | (1) |
|  | 2.5.2 | * Wanneer pers-blomplante en wit-blomplante gekruis word🗸 * sal al die nakommelinge pers blomme hê🗸/ geen wit blomme |  | (2) |
|  | 2.5.3 | * Die twee allele vir ‘n eienskap🗸 * Skei gedurende meiose🗸sodat * Elke gameet een alleel bevat🗸 vir die eienskap |  | (3) |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2.5.4 | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | P1 | Fenotipe | | Pers | | x | Pers🗸 | |  | Genotipe | | Dd | | x | Dd🗸 | | *Meiose* |  | |  | |  |  | |  | G/gamete | | D , d | | x | D, d🗸 | | *Bevrugting* |  | |  | |  |  | | F1 | Genotipe | | DD ; Dd ; Dd ; dd🗸 | | | | |  |  | |  | | | | |  | Fenotipe | | 3 pers : 1 wit🗸\* | | | | | P1 en F1🗸 |  |  | |  | | | | Meiose en bevrugting🗸 | | | | Enige 6 | | |   **OF**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | P1 | Fenotipe | Pers | | x | Pers🗸 | |  | Genotipe | Dd | | x | Dd🗸 | |  |  |  | | | | | *Meiose* |  | |  |  |  | | --- | --- | --- | | Gamete | D | d | | D | DD | Dd | | d | Dd | dd |   1 punt vir korrekte gamete  1 punt vir korrekte genotipe | | | | |  |  | | *Bevrugting* |  | |  |  | |  |  |  | | | | | F1 | Fenotipe | 3 pers ; 1 wit🗸 | | | | | P1 en F1🗸 |  |  |  | | | | Meiose en bevrugting🗸 | | | Enige 6 | | | |  | | | | | | | (6)  (6)  (12) |

VRAAG 1.4 V2 NOV 2017

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1.4.1 | (a)  (b) | Gene🗸/allele  Monohibried🗸 |  | (1)  (1) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 1.4.2 | Ovarium🗸/ginesium/stamper/saadknop |  | (1) |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1.4.3 | (a)  (b) | 2🗸/Twee  4🗸/Vier | |  | | (1)  (1) |
|  | 1.4.4 | (a)  (b) | Violet🗸  Kort🗸 | |  | | (1)  (1) |
|  | 1.4.5 | 2🗸/Twee | |  | | (1)  **(8)** | |

VRAAG 2.3 V2 NOV 2019

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2.3 | 2.3.1 | Gevlekte🗸swart |  | (1) |
|  | 2.3.2 | * Gevlekte paddas produseer nageslag wat ongevlek is🗸   **OF**   * Die gevlekte nageslag was drie keer meer as die nageslag wat ongevlek is / verhouding van gevlekte tot ongevlekte is 3:1 |  | (2) |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2.3.3 | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | P1 | Fenotipe | | Gevlekte | | x | Ongevlekte🗸 | |  | Genotipe | | Dd | | x | dd🗸 | | *Meiose* |  | |  | |  |  | |  | G/gamete | | D , d | | x | d, d🗸 | | *Bevrugting* |  | |  | |  |  | | F1 | Genotipe | | DD ; Dd ; dd ; dd🗸\* | | | | |  |  | |  | | | | |  | Fenotipe | | (2) gevlekte : (2) ongevlekte\* | | | | | P1 en F1🗸 |  |  | |  | | | | Meiose en bevrugting🗸 | | | | 2 verpligte + enige 4 | | |   **OF**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | P1 | Fenotipe | Gevlekte | | x | Ongevlekte🗸 | |  | Genotipe | Dd | | x | dd🗸 | |  |  |  | | | | | *Meiose* |  | |  |  |  | | --- | --- | --- | | Gamete | D | d | | d | Dd | dd | | d | Dd | dd |   1 punt vir korrekte gamete  1 punt vir korrekte genotipe\* | | | | |  |  | | *Bevrugting* |  | |  |  | |  |  |  | | | | | F1 | Fenotipe | (2) gevlekte ; (2) ongevlekte🗸\* | | | | | P1 en F1🗸 |  |  |  | | | | Meiose en bevrugting🗸 | | | 2 verpligte + enige 4 | | | |  | | | | | | | (6)  (9) |