 Provinsie van

OOSKAAP

ONDERWYS

**DIREKTORAAT SENIOR KURRIKULUM BESTUUR**

**(SEN-FET)**

**TUIS ONDERRIG SELF-STUDIE WERKSKAART ANTWOORDBLAD**

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| **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

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| --- | --- | --- |
| 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**

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| 1. |

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| --- | --- | --- | --- | --- |
| 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 gamete1 punt vir korrekte genotipes\* |
|  |  |
| *Bevrugting* |  |
|  |  |
|  |  |  |
| F1 | Fenotipe |  1bruin : 1 blou🗸\*  |
| P1 en F1🗸 |  |  |  |
| Meiose en bevrugting🗸 | 2 Verpligte + Enige 4 |
|  |

 | (6)(6) |

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

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| --- | --- | --- | --- | --- |
| 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 gamete1 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:

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| Sleutel: Swart vis (B) x Grys vis (G)  |

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| **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)  |
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| --- |
|  |
| Sleutel: Rooi voël (A) x Blou voël (a)  |

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| --- | --- |
| **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         |

 |
|

|  |
| --- |
| witrooi pienk |
| Sleutel: Rooi blom (R)x Wit blom (W)  |

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| --- | --- |
| **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)  |

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**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) |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 2.5.4 |

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| --- | --- | --- | --- | --- |
| 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 gamete1 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

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|  | 1.4.1 | (a)(b) | Gene🗸/alleleMonohibried🗸 |  | (1)(1) |

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

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| --- | --- | --- | --- | --- | --- |
|  | 1.4.3 | (a)(b) | 2🗸/Twee4🗸/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

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| --- | --- | --- | --- | --- |
| 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) |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 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 gamete1 punt vir korrekte genotipe\* |
|  |  |
| *Bevrugting* |  |
|  |  |
|  |  |  |
| F1 | Fenotipe |  (2) gevlekte ; (2) ongevlekte🗸\*  |
| P1 en F1🗸 |  |  |  |
| Meiose en bevrugting🗸 | 2 verpligte + enige 4  |
|  |

 | (6)(9) |