**LAB TECHNICIAN NOTES SCHOOL:**

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| **EXPERIMENT 2.2: What if the habitat of bean prey was changed?** |

*Risks should be managed by use of PPE and/or appropriate control measures*

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 44–45 and 189

**Equipment required**

|  |
| --- |
| Each group requires:  Paper cups  Tools: knives, forks, spoons, sticky tape, plastic gloves  Bean prey:  red butted beans (kidney beans)  long-toothed yellow beans  panther-toothed black beans  wicked white beans  Timer |

**Recipes**

| **Chemical/solution** | **Formula** | **Mol. Wt** | **Procedure** |
| --- | --- | --- | --- |
|  |  |  |  |

**Hazardous chemicals required/produced**

| **Reactant or product name and concentration** | **GHS classification** | **GHS hazard statement** | **Control measures** |
| --- | --- | --- | --- |
|  |  |  |  |

NON-HAZARDOUS substances

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| --- | --- | --- | --- |
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Other hazards and possible risks

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| --- |
| Knives have a sharp cutting edge so could cut skin.  Forks have sharp points so could pierce skin.  Use the tools for the purpose set out in the experiment. |

Protective measures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lab coat | Safety glasses | Gloves | Fume cupboard | Other |
|  |  |  |  |  |
|  | | | | |

Assessor’s signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*\*\*\*\***This assessment is not valid until it has been completed and signed by an assessor approved by the school.**

***All technicians are to sign the following statement before conducting this experiment.***

I have read this risk assessment and I understand the safety procedures and risks involved.

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| **Technician’s name** | **Technician’s signature** | **Date** |
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Disposal of waste and lab technician notes

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| 4 different beans are required. Does not really matter what type of beans provided they look different to each other.  The supermarket or gardening stores have beans.  All beans should be collected and sorted at the end of the practical and put in individual bags to reuse.  Paper cups can be substituted with plastic cups or any other container. |

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**LAB TECHNICIAN NOTES SCHOOL:**

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| **EXPERIMENT 2.3: Divergent and convergent evolution of big beaks and small beaks** |

*Risks should be managed by use of PPE and/or appropriate control measures*

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 46–47 and 190

**Equipment required**

|  |
| --- |
| The class requires:  6 previously prepared bags of food:  North Trayland/Season 1 = 4 handfuls popcorn , 20 kidney beans, 50 marbles  North Trayland/Season 2 = 1 handful popcorn , 10 kidney beans, 50 marbles  North Trayland/Season 3 = 100 marbles  South Trayland/Season 1 = 4 handfuls popcorn , 20 kidney beans, 50 marbles  South Trayland/Season 2 = 6 handfuls popcorn , 10 kidney beans, 5 marbles  South Trayland/Season 3 = 8 handfuls popcorn  20 large bull dog clips  20 medium-sized bull dog clips  20 small bull dog clips  30 plastic cups  2 large trays  6 plastic bags  Timer |

**Recipes**

| **Chemical/solution** | **Formula** | **Mol. Wt** | **Procedure** |
| --- | --- | --- | --- |
|  |  |  |  |

**Hazardous chemicals required/produced**

| **Reactant or product name and concentration** | **GHS classification** | **GHS hazard statement** | **Control measures** |
| --- | --- | --- | --- |
|  |  |  |  |

NON-HAZARDOUS substances

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| --- | --- | --- | --- |
|  |  |  |  |

Other hazards and possible risks

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| --- |
| Marbles – may break if dropped. Could cause injury or damage if thrown.  Bull dog clips – could pinch skin when closing. |

Protective measures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lab coat | Safety glasses | Gloves | Fume cupboard | Other |
| Yes |  |  |  |  |
|  | | | | |

Assessor’s signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*\*\*\*\***This assessment is not valid until it has been completed and signed by an assessor approved by the school.**

***All technicians are to sign the following statement before conducting this experiment.***

I have read this risk assessment and I understand the safety procedures and risks involved.

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| **Technician’s name** | **Technician’s signature** | **Date** |
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Disposal of waste and lab technician notes

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| Keep the beans and popcorn if undamaged for further classes. Bin if they are damaged.  Keep the bull dog clips for next time. |

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**LAB TECHNICIAN NOTES SCHOOL:**

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| **EXPERIMENT 2.4: Popcorn dating** |

*Risks should be managed by use of PPE and/or appropriate control measures*

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 48–51 and 191

**Equipment required**

|  |
| --- |
| Each group requires:  Previously prepared bags of microwave popcorn (unbuttered)  Bag A : stop microwave 10 seconds after the first pop (record the actual time)  Bag B: stop microwave 30 seconds after the first pop (record the actual time)  Bag C: stop microwave 10 seconds after the last pop (record the actual time)  Bag D: mystery fossil bag (your teacher or laboratory technician will have microwaved this bag for a time between bag A and C)  Microwave oven  4 large trays |

**Recipes**

| **Chemical/solution** | **Formula** | **Mol. Wt** | **Procedure** |
| --- | --- | --- | --- |
|  |  |  |  |

**Hazardous chemicals required/produced**

| **Reactant or product name and concentration** | **GHS classification** | **GHS hazard statement** | **Control measures** |
| --- | --- | --- | --- |
|  |  |  |  | |

NON-HAZARDOUS substances

|  |  |  |  |
| --- | --- | --- | --- |
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Other hazards and possible risks

|  |
| --- |
| Microwave oven:  The popping corn when heated in the microwave oven can become very hot. Allow to cool a little before handling. Wear heat proof gloves when removing from the microwave.  Ensure microwave oven has been tested and tagged prior to use and follow manufacturer’s instructions for safe use.  Check to ensure there are no allergies to popcorn. |

Protective measures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lab coat | Safety glasses | Gloves | Fume cupboard | Other |
| Yes | Yes | Yes |  | Heat proof gloves for handling hot popcorn bags |
|  | | | | |

Assessor’s signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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***All technicians are to sign the following statement before conducting this experiment.***

I have read this risk assessment and I understand the safety procedures and risks involved.

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| **Technician’s name** | **Technician’s signature** | **Date** |
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Disposal of waste and lab technician notes

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| Popcorn can be disposed of to the bin.  Popping corn can be purchased from the supermarket. Try to ensure the popping corn is all the same for each group. Use plain popping corn. Buttered can be very messy.  You may wish to do the unknown popcorn fossil at the same time as the other bags. Have the bags already popped at the right timing prior to class. Remember to time.  Suggest 4 groups. |

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**LAB TECHNICIAN NOTES SCHOOL:**

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| **CHALLENGE 2.7: Selective breeding of dogs** |

*Risks should be managed by use of PPE and/or appropriate control measures*

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 58–59 and 193

**Equipment required**

|  |
| --- |
| Each group requires:  Counter and permanent marker |

**Recipes**

| **Chemical/solution** | **Formula** | **Mol. Wt** | **Procedure** |
| --- | --- | --- | --- |
|  |  |  |  |

**Hazardous chemicals required/produced**

| **Reactant or product name and concentration** | **GHS classification** | **GHS hazard statement** | **Control measures** |
| --- | --- | --- | --- |
|  |  |  |  |

NON-HAZARDOUS substances

|  |  |  |  |
| --- | --- | --- | --- |
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Other hazards and possible risks

|  |
| --- |
| Permanent markers may contain solvents, avoid breathing vapour. Replace lid after using. Difficult to remove off clothing and benches.  Counters could be a choking hazard or be thrown. |

Protective measures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lab coat | Safety glasses | Gloves | Fume cupboard | Other |
| Yes |  |  |  |  |
|  | | | | |

Assessor’s signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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I have read this risk assessment and I understand the safety procedures and risks involved.

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| --- | --- | --- |
| **Technician’s name** | **Technician’s signature** | **Date** |
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Disposal of waste and lab technician notes

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| Removing permanent marker from the counter can be done by using cottonwool ball dipped in a little methylated spirits and rubbing the marks off. Alternatively, keep these counters with the marks still on them for following classes.  If using Methylated spirits note it is a flammable liquid and to keep away from ignition sources, flame and heat. Wear gloves, safety glasses and lab coat in a well ventilated room when cleaning with methylated spirits. |

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**LAB TECHNICIAN NOTES SCHOOL:**

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| **EXPERIMENT 2.8: Selecting for sickle cell anaemia** |

*Risks should be managed by use of PPE and/or appropriate control measures*

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 60–61 and 194

**Equipment required**

|  |
| --- |
| Each group requires:  75 dried red kidney beans (these are the sex cells carrying ‘H’ the unaffected normal haemoglobin allele)  25 white beans (these are the sex cells carrying ‘h’ the affected sickle cell allele)  5 containers  Coin or counter (for flipping heads or tails)  Permanent marker |

**Recipes**

| **Chemical/solution** | **Formula** | | **Mol. Wt** | | **Procedure** |
| --- | --- | --- | --- | --- | --- |
|  |  |  | |  | |

**Hazardous chemicals required/produced**

| **Reactant or product name and concentration** | **GHS classification** | **GHS hazard statement** | **Control measures** |
| --- | --- | --- | --- |
|  |  |  |  |

NON-HAZARDOUS substances

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

Other hazards and possible risks

|  |
| --- |
| Permanent markers may contain solvents, avoid breathing vapour. Replace lid after using. Difficult to remove off clothing and benches.  Counters or coins could be a choking hazard or be thrown. |

Protective measures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lab coat | Safety glasses | Gloves | Fume cupboard | Other |
| Yes | Yes | Yes |  |  |
|  | | | | |

Assessor’s signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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I have read this risk assessment and I understand the safety procedures and risks involved.

|  |  |  |
| --- | --- | --- |
| **Technician’s name** | **Technician’s signature** | **Date** |
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Disposal of waste and lab technician notes

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| Plastic cups or glass beakers could be used as containers.  Count out the beans into a zip lock bag ready for use. They should all be returned to you back in the original bag. Use for following classes. |

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| \*\*\*\*NOTES:   * Individual schools have a legal obligation to acquire their own manufacturer’s SDS and produce a risk assessment relevant to their own situation. * This risk assessment sheet is provided for your guidance only. * Disposal of waste is subject to the laws and regulations of states, territories and local authorities. * It is not to be assumed that products bought from supermarkets are non-hazardous.   DISCLAIMER:  These guidelines are designed to serve as a general reference only. It does not replace the school’s legal obligation to provide a valid risk assessment to ensure the safety of the staff and students conducting this experiment. While the Publisher has endeavoured to ensure that the material provided is free from error, the Publisher does not warrant the accuracy, adequacy or completeness of that material or that the material is suitable for your intended use. To the fullest extent permitted by law the Publisher disclaims all responsibility for any actions taken or not taken in relation to the material provided. |