**RISK ASSESSMENT SCHOOL:**

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| --- |
| **CHALLENGE 7.1: Bringing graphs to life** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 156-157 and 219

**Equipment required**

|  |
| --- |
| Each group requires:  Clear space (maybe outside)  Tape measure, stopwatch, masking tape, marker pen |

**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 marker may contain solvents, avoid breathing vapour. Replace lid after using. Difficult to remove off clothing and benches. |

Protective measures

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

Student clean up and disposal of wastes

|  |
| --- |
| Collect all equipment to one place for the lab technician.  Note: If outside chalk could be used. If inside masking tape will be easier to remove off carpet. |

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

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

***All teachers 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.

|  |  |  |
| --- | --- | --- |
| **Teacher’s name** | **Teacher’s signature** | **Date** |
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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. |

**RISK ASSESSMENT SCHOOL:**

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| **experiment 7.2A: The ticker timer** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 158–159 and 220

**Equipment required**

|  |
| --- |
| Each group requires:  Ticker timer, scissors, power supply, graph paper, 2 electrical wires, glue, ticker tape, carbon circles/discs (specifically for ticker timer) pencil and ruler |

**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

|  |
| --- |
| Ticker timer is connected to a power supply via a power supply box and has a moving part that taps down at a regular speed. Keep hands away from moving parts when using. Read manufacturer’s instructions on its use.  Power supply boxes are plugged into mains electricity. There is the possibility of an electric shock. Ensure electrical equipment has current tag, safe and operated correctly. Check cords regularly and replace if any signs of damage.  Pencil may have a sharp pointed end and have the potential to pierce skin.  Scissors may have sharp blades that can cause cuts. |

Protective measures

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

Student clean up and disposal of wastes

|  |
| --- |
| Collect all equipment to one place for lab technician.  Unplug the power boxes and wrap cord around the box.  Teacher notes:  Ensure a good supply of carbon circles/discs and ticker tape.  The ticker timer tape should go under the carbon circle/disc.  The starting voltage on the power supply could be 6V and the wires are connected to the AC terminals of the power supply. |

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

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

***All teachers 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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| **Teacher’s name** | **Teacher’s signature** | **Date** |
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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. |

**RISK ASSESSMENT SCHOOL:**

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| --- |
| **experiment 7.2B: Using a motion sensor** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 158–159 and 221

**Equipment required**

|  |
| --- |
| Each group requires:  Motion sensor, dynamics trolley, laptop computer |

**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

|  |
| --- |
| Laptops that are connected to mains power supply, have the possibility of an electric shock. Keep away from liquids and ensure all cords are not plugged in across walkways. Ensure electrical equipment has current tag, safe and operated correctly. Check cords regularly and replace if any signs of damage.  Dynamics trolley is used for movement and collision practicals. Ensure they are used in controlled conditions and under teacher supervision. In this practical care needs to be taken when pushing the dynamics trolley towards the motion sensor. Have a student prepared to move the motion sensor or stop the trolley should contact be imminent. |

Protective measures

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

Student clean up and disposal of wastes

|  |
| --- |
| Collect all equipment to one place for lab technician.  Shut down lap tops and put away.  Disconnect motion sensors and leave tidy or put away. |

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

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

***All teachers 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.

|  |  |  |
| --- | --- | --- |
| **Teacher’s name** | **Teacher’s signature** | **Date** |
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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. |

**LAB TECHNICIAN NOTES SCHOOL:**

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| --- |
| **EXPERIMENT 7.2B: Using a motion sensor** |

*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 158–159 and 221

**Equipment required**

|  |
| --- |
| Motion sensor, dynamics trolley, laptop computer |

**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

|  |
| --- |
| Laptops if connected to mains power supply, have the possibility of an electric shock. Keep away from liquids and ensure all cords are not plugged in across walkways. Ensure electrical equipment has current tag, safe and operated correctly. Check cords regularly and replace if any signs of damage  Dynamics trolley is used for movement and collision practicals. Ensure they are used in controlled conditions and under teacher supervision. In this practical care needs to be taken when pushing the dynamics trolley towards the motion sensor. Have a student prepared to move the motion sensor or stop the trolley should contact be imminent. |

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.

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

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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. |

**RISK ASSESSMENT SCHOOL:**

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| **CHALLENGE 7.3: Measuring acceleration by timing or using a motion sensor** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 160–161 and 221

**Equipment required**

|  |
| --- |
| Each group requires:  Ball, stopwatch, tape measure, motion sensor |

**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

|  |
| --- |
| Dropping a ball from height can be hazardous for anyone moving around below. Check the area is clear. Perhaps have a student standing nearby (6 meters away) to the drop point to ensure it is a clear area before the ball is dropped.  Suggest dropping no more than a one storey in height and using a soft ball such as a **tennis ball.**  Motion sensor: The hazard involved (if any) can be only determined by which sensor you use and how it is used. Check manufacturer’s safety advice for your motion sensors. |

Protective measures

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

Student clean up and disposal of wastes

|  |
| --- |
| Collect all equipment to one place for lab technician. |

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

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

***All teachers 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.

|  |  |  |
| --- | --- | --- |
| **Teacher’s name** | **Teacher’s signature** | **Date** |
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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. |

**RISK ASSESSMENT SCHOOL:**

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| --- |
| **CHALLENGE 7.4A: Make an accelerometer** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 162–163 and 222

**Equipment required**

|  |
| --- |
| Each group requires:  Small glass jar and lid, paperclip, short length of cotton, sticky tape, scissors |

**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

|  |
| --- |
| Glass jars may break and cause cuts. Sweep up broken glass with a brush and dustpan, do not use fingers. Discard to a broken glass bucket.  Scissors may have sharp blades that can cause cuts. |

Protective measures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lab coat | Safety glasses | Gloves | Fume cupboard | Other |
| Yes | Yes |  |  | Careful handling required if accelerometer leaves school and no safety equipment is available. |

Student clean up and disposal of wastes

|  |
| --- |
| Collect all equipment to one place for the lab technician.  Water can go down the sink. Do not allow paper clips to go down sink. Collect and reuse. |

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

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

***All teachers 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.

|  |  |  |
| --- | --- | --- |
| **Teacher’s name** | **Teacher’s signature** | **Date** |
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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. |

**RISK ASSESSMENT SCHOOL:**

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| --- |
| **CHALLENGE: 7.4B How do you like your eggs?** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 162–163 and page 222

**Equipment required**

|  |
| --- |
| 2 eggs in their shells – one fresh and one hard-boiled, but no indication of which is which.  Note: Use half full water bottles if eggs are a concern or do as a teacher demonstration. |

**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

|  |
| --- |
| **Egg – ALLERGY ALERT** – be aware of any egg allergies which can be quite serious. Includes handling of egg and egg cartons. Thorough clean up required to ensure no traces left on benches etc. Wear lab coat, glasses and gloves and provide for students. |

Protective measures

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

Student clean up and disposal of wastes

|  |
| --- |
| Thorough clean up required to ensure no traces left on benches, particularly if there is a breakage. Wear lab coat, glasses and gloves.  Eggs to be collected to one place. The lab technician will dispose of them as follows:  Boiled egg can be bagged and go in the bin for hard rubbish collection.  Uncooked eggs can be hard boiled and disposed of as above OR broken in the sink and flushed away. Shells put in plastic bag, sealed and put in bin.  NOTE: Discuss with lab technician as to whether this practical will be a demonstration or there will be class participation. This will determine the quantity of fresh and boiled eggs required. |

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

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

***All teachers 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.

|  |  |  |
| --- | --- | --- |
| **Teacher’s name** | **Teacher’s signature** | **Date** |
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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. |

**RISK ASSESSMENT SCHOOL:**

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| --- |
| **Experiment 7.5A Resultant forces** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 164–165 and page 223

**Equipment required**

|  |
| --- |
| 3 spring balances all the same. 0-10 or 0-20 N are the best.  2 rubber bands, graph paper and masking tape |

**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

|  |
| --- |
| Rubber band may become or be used as a projectile. Possible allergic reaction from rubber band due to presence of latex.  Spring balances use a spring that could be stretched and released causing it to flick back. They also have a hook on them which could cause skin or eye damage if not handled correctly. |

Protective measures

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

Student clean up and disposal of wastes

|  |
| --- |
| Collect all equipment to one place for the lab technician.  Reuse rubber bands.  Check spring balances are reading zero prior to use. Adjust if not. |

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

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

***All teachers 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.

|  |  |  |
| --- | --- | --- |
| **Teacher’s name** | **Teacher’s signature** | **Date** |
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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. |

**RISK ASSESSMENT SCHOOL:**

|  |
| --- |
| **experiment 7.5B: Accelerating masses** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 164–165 and 224

**Equipment required**

|  |
| --- |
| Each group requires:  Dynamics trolley, string, mass hanger and 50g masses, several 1kg masses, desk-mountable pulley wheel with clamp, motion sensor or stopwatch, tape measure or ticker timer, power supply, ticker tape, cushioning material, electronic balance if masses are an unknown weight. |

**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

|  |
| --- |
| Dynamic trolleys are used for movement and collision practicals. Ensure they are used in controlled conditions and under teacher supervision. In this practical care needs to be taken when releasing the trolley. Ensure the weight hits the floor just before the trolley crashes into the pulley at the end of the bench. Ask students to be prepared to save the trolley if it looks like it may crash off the bench.  Cushioning needs to be provided for the weights to drop onto, on the floor for example, polystyrene, towel, box, bubble wrap, cardboard, sponge etc.  Masses of varying weight are used in this experiment. If dropped they could damage feet or equipment.  Ticker timer is connected to a power supply via a power supply box and has a moving part that taps down at a regular speed. Keep hands away from moving parts when using. Read manufacturer’s instructions on its use.  Power supply boxes are plugged into mains electricity. There is the possibility of an electric shock. Ensure electrical equipment has current tag, safe and operated correctly. Check cords regularly and replace if any signs of damage.  Laptops (if connected to mains power supply), have the possibility of an electric shock. Keep away from liquids and ensure all cords are not plugged in across walkways. Ensure electrical equipment has current tag, safe and operated correctly. Check cords regularly and replace if any signs of damage. |

Protective measures

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

Student clean up and disposal of wastes

|  |
| --- |
| Practical hints:  Mark a starting point on the bench using masking tape from which the trolley begins each time.  Time from the point the trolley leaves the starting point to the sound of the weights hitting the ground.  If the string is longer on the bench than it is in height, the weights will hit the ground and stop the force pulling the trolley.  Be prepared for students to stop the trolley’s momentum as the weight hits the ground.  Collect all equipment to one place for the lab technician.  Switch off and unplug the power boxes. Wrap cord around the box. |

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

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

***All teachers 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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**RISK ASSESSMENT SCHOOL:**

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| **experiment 7.6: Newtons rocket** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 166–167 and page 225

**Equipment required**

|  |
| --- |
| Balloon, drinking straw, sticky tape, fishing line, timer, measuring tape |

**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

|  |
| --- |
| **ALLERGY ALERT:** Balloons may contain latex. Check for latex allergies before use. They can also pop and give a fright.  Fishing line is quite fine and strong. Could cut skin if pulled tight. |

Protective measures

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

Student clean up and disposal of wastes

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| --- |
| Reuse anything you can, otherwise put in bin.  Collect all equipment to one place for lab technician. |

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

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**RISK ASSESSMENT SCHOOL:**

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| **experiment 7.7: Colliding trolleys** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 168–169 and 226

**Equipment required**

|  |
| --- |
| Each group requires:  2 dynamics trolleys, meter ruler, ruler, several 1kg masses to add to trolleys, 2 rubber bands tied together that will stretch 20cm quite easily, level benchtop, piece of A4 paper, masking tape |

**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

|  |
| --- |
| Dynamic trolleys are used for movement and collision practicals. Ensure they are used in controlled conditions and under teacher supervision. In this practical care needs to be taken when releasing the two trolleys. Make sure fingers are clear from the impact spot.  1kg weights may damage feet or furniture if dropped. Handle over bench at low heights.  Rubber bands may be used as a projectile. Possible allergic reaction from rubber band due to presence of latex. As the rubber bands are stretched there is the potential for one or both to break. Wear safety glasses.  Meter rulers have sharp corners on the ends of the ruler. Should be used safely and in consideration of other students. |

Protective measures

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

Student clean up and disposal of wastes

|  |
| --- |
| Collect all equipment to one place for lab technician.  Dismantle equipment. Keep rubber bands. Remove masking tape from benches. |

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

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

***All teachers 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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**RISK ASSESSMENT SCHOOL:**

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| **experiment 7.8: What if an elastic band was stretched further?** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 170–171 and 227

**Equipment required**

|  |
| --- |
| Each group requires:  Elastic or rubber bands, meter ruler, tape measure, chalk, spring balance |

**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

|  |
| --- |
| Rubber/elastic bands may be used as a projectile. Possible allergic reaction from the rubber band due to presence of latex. As the rubber/elastic bands are stretched there is the potential for it to break. Wear safety glasses.  Meter rulers have sharp corners on the end of the ruler. Should be used safely and in consideration of other students.  Spring balances use a spring that may be stretched and released causing it to flick back. They also have a hook on them which may cause skin or eye damage if not handled correctly. |

Protective measures

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

Student clean up and disposal of wastes

|  |
| --- |
| Reuse rubber/elastic bands.  Collect all equipment to one place for the lab technician or put away.  Check spring balances are reading zero prior to use. Adjust if not. |

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

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**RISK ASSESSMENT SCHOOL:**

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| **Challenge 7.9: Conservation in action** |

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

Description of procedure (attach a copy of the experiment)

**Oxford Science 10:** pages 172–173 and 228

**Equipment required**

|  |
| --- |
| Each group requires:  Simple pendulum made by a mass on the end of a length of string, retort stand and clamp. |

**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

|  |
| --- |
| Pendulum: depending on what is used will determine the risk. Try to use brass (or other safe metal) ball pendulums from a science supplier. They are designed with a hole for the string to be tied to. Otherwise use anything that has some weight and can easily be secured to string. Not too heavy.  Ensure the pendulum has room to swing without hitting anybody or anything. |

Protective measures

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

Student clean up and disposal of wastes

|  |
| --- |
| Collect all equipment to one place for the lab technician or put away. |

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

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