From *Education in Chemistry*
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ROYAL SOCIETY OF CHEMISTRY

CIDER

Writing a method for practicals

eic

Use CIDER to write a method

Control variables

Independent variable

Dependent variable

Equipment

Risk assessment

ROYAL SOCIETY OF CHEMISTRY

Adding Mg to HCl to test rate of reaction

1. Measure 50 cm^3 of 1.0 mol/dm^3 hydrochloric acid using one of the measuring cylinders. Pour the acid into the 100 cm^3 conical flask.

2. Fit the bung and delivery tube to the top of the flask.

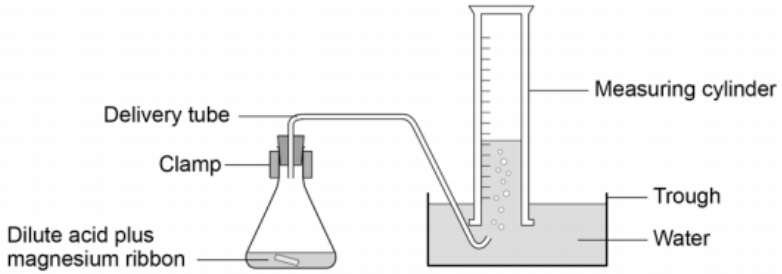
3. Half fill the trough or bowl with water.

4. Fill the other measuring cylinder with water. Make sure it stays filled with water when you invert it into the water trough and that the delivery tube is positioned correctly.

5. Add a single 3 cm strip of magnesium ribbon to the flask, put the bung back into the flask as quickly as you can, and start the stopclock.

6. Record the volume of hydrogen gas given off at suitable intervals (eg, 10 seconds) in a table. Continue timing until the volume of gas does not change.

7. Repeat steps 1–6 using 1.5 mol/dm^3 hydrochloric acid



Adding Mg to HCl to test rate of reaction

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Find CIDER in this method

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Find CIDER: Answers

Volume of HCl

1. Measure **50 cm^3** of 1.0 mol/dm^3 hydrochloric acid using one of the measuring cylinders. Pour the acid into the 100 cm^3 conical flask.

2. Fit the bung and delivery tube to the top of the flask.

3. Half fill the trough or bowl with water.

4. Fill the other measuring cylinder with water. Make sure it stays filled with water when you invert it into the water trough and that the delivery tube is positioned correctly.

5. Add a **single 3 cm strip of magnesium ribbon** to the flask, put the bung back into the flask as quickly as you can, and start the stopclock. **Length of Mg**

6. Record the volume of hydrogen gas given off at suitable intervals (eg, 10 seconds) in a table. Continue timing until the volume of gas does not change.

7. Repeat steps 1–6 using 1.5 mol/dm^3 hydrochloric acid

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What is staying the same?

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Find CIDER: Answers

Concentration of HCl

1. Measure 50 cm^3 of **1.0 mol/dm^3 hydrochloric acid** using one of the measuring cylinders. Pour the acid into the 100 cm^3 conical flask.

2. Fit the bung and delivery tube to the top of the flask.

3. Half fill the trough or bowl with water.

4. Fill the other measuring cylinder with water. Make sure it stays filled with water when you invert it into the water trough and that the delivery tube is positioned correctly.

5. Add a single 3 cm strip of magnesium ribbon to the flask, put the bung back into the flask as quickly as you can, and start the stopclock.

6. Record the volume of hydrogen gas given off at suitable intervals (eg, 10 seconds) in a table. Continue timing until the volume of gas does not change.

7. Repeat steps 1–6 using 1.5 mol/dm^3 hydrochloric acid

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What are you changing?

ROYAL SOCIETY OF CHEMISTRY

Find CIDER: Answers

1. Measure 50 cm^3 of 1.0 mol/dm^3 hydrochloric acid using one of the measuring cylinders. Pour the acid into the 100 cm^3 conical flask.

2. Fit the bung and delivery tube to the top of the flask.

3. Half fill the trough or bowl with water.

4. Fill the other measuring cylinder with water. Make sure it stays filled with water when you invert it into the water trough and that the delivery tube is positioned correctly.

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6. Record the **volume of hydrogen gas** given off at suitable intervals (eg, 10 seconds) in a table. Continue timing until the volume of gas does not change.

7. Repeat steps 1–6 using 1.5 mol/dm^3 hydrochloric acid

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What are you measuring?

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Find CIDER: Answers

1. Measure 50 cm^3 of 1.0 mol/dm^3 **hydrochloric acid** using one of the **measuring cylinders**. Pour the acid into the 100 cm^3 **conical flask**.

2. Fit the **bung** and **delivery tube** to the top of the **flask**.

3. Half fill the **trough or bowl** with water.

4. Fill the other **measuring cylinder** with water. Make sure it stays filled with water when you invert it into the **water trough** and that the **delivery tube** is positioned correctly.

5. Add a single 3 cm strip of **magnesium ribbon** to the **flask**, put the **bung** back into the **flask** as quickly as you can, and start the **stopclock**.

6. Record the volume of hydrogen gas given off at suitable intervals (eg, 10 seconds) in a table. Continue timing until the volume of gas does not change.

7. Repeat steps 1–6 using 1.5 mol/dm^3 hydrochloric acid.

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What are you using?

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Find CIDER: Answers

Put on goggles

Handle acid carefully

1. Measure 50 cm^3 of 1.0 mol/dm^3 hydrochloric acid using one of the measuring cylinders. Pour the acid into the 100 cm^3 conical flask.

Handle glassware carefully

2. Fit the bung and delivery tube to the top of the flask.

3. Half fill the trough or bowl with water.

4. Fill the other measuring cylinder with water. Make sure it stays filled with water when you invert it into the water trough and that the delivery tube is positioned correctly.

5. Add a single 3 cm strip of magnesium ribbon to the flask, put the bung back into the flask as quickly as you can, and start the stopclock.

6. Record the volume of hydrogen gas given off at suitable intervals (eg, 10 seconds) in a table. Continue timing until the volume of gas does not change.

7. Repeat steps 1–6 using 1.5 mol/dm^3 hydrochloric acid

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What will keep you safe?

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