10 SCIENCE BIOLOGY INVESTIGATION: DNA EXTRACTION 2015

Name:_____

Form:_____

Teacher: Miss Cerny

Due date:_____

Living things are made up of cells which contain the genetic code which distinguishes them from other living thing. This code is found in the chemical inside the nucleus of cells, DNA.

Your task is to extract (take out) the DNA from a piece of kiwi fruit.

Plagiarism

You must write in your own words not copy sentences word for word from another student or another source.

Plagiarising = instant zero on assignment and you will have to re-do it.

Assessment policy

Have sick note/legitimate reason from parent = new negotiated due date.

Assignment not submitted on due date and no sick note from parents = -20% mark

Assignment not submitted on new negotiated due date = -40% mark

+ Letter home to parents.
+ Must attend academic completion to complete assignment.

If you are not at school the day this assignment is due, please email it to me by 4pm.

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ANSWER KEY

Title (write a title for the investigation, needs to be detailed. (1 mark)

Extraction of DNA from kiwi fruit

Aim (what do you want to discover by doing this experiment?) (1 mark)

To extract DNA from a piece of kiwi fruit.

Materials (list all materials used, be specific with number of items used and amounts or sizes). (2 marks)

Retort stand
20mL methylated spirits
25mL hot water
Blended piece of kiwi fruit
1x rubber stopper
1 tsp of salt
1x100mL beaker
1x filter funnel holder
1x test tube rack
2x large test tubes
25mL measuring cylinder
1x filter paper
1x filter funnel
1x plastic spoon
1x stirring rod

Method:

1. Blend the piece of kiwi fruit using the blender.
3. Place pulp in a large test tube. Set aside.
4. Add 25ml of hot tap water to a beaker and add 1 teaspoon of salt. Mix with stirring rod.
5. Add enough salty water to **just** cover the kiwi pulp in the large test tube.
6. Carefully using a stopper in the end of the test tube; shake for 20 seconds.
7. Set up the filter paper in the filter funnel and sit in the filter funnel holder over the test tube using the retort stand.
8. Filter the shaken solution into another large test tube. This will take time.

DO NOT POKE A HOLE INTO THE FILTER PAPER WITH THE STIRRING ROD.

The next day...

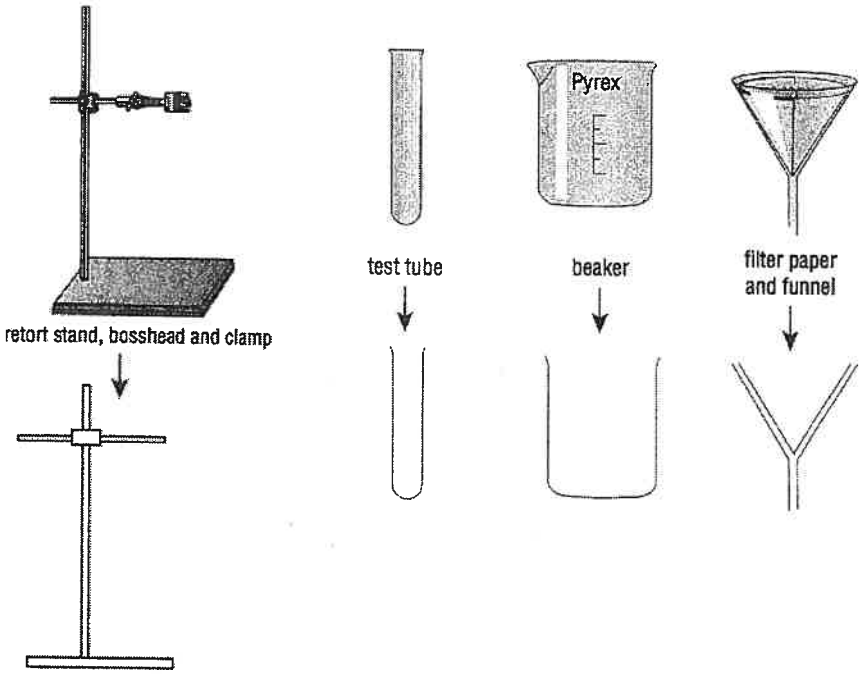
9. ***Slowly*** add 20 ml of methylated spirits down the side of the test tube making sure that the two solutions do not mix.

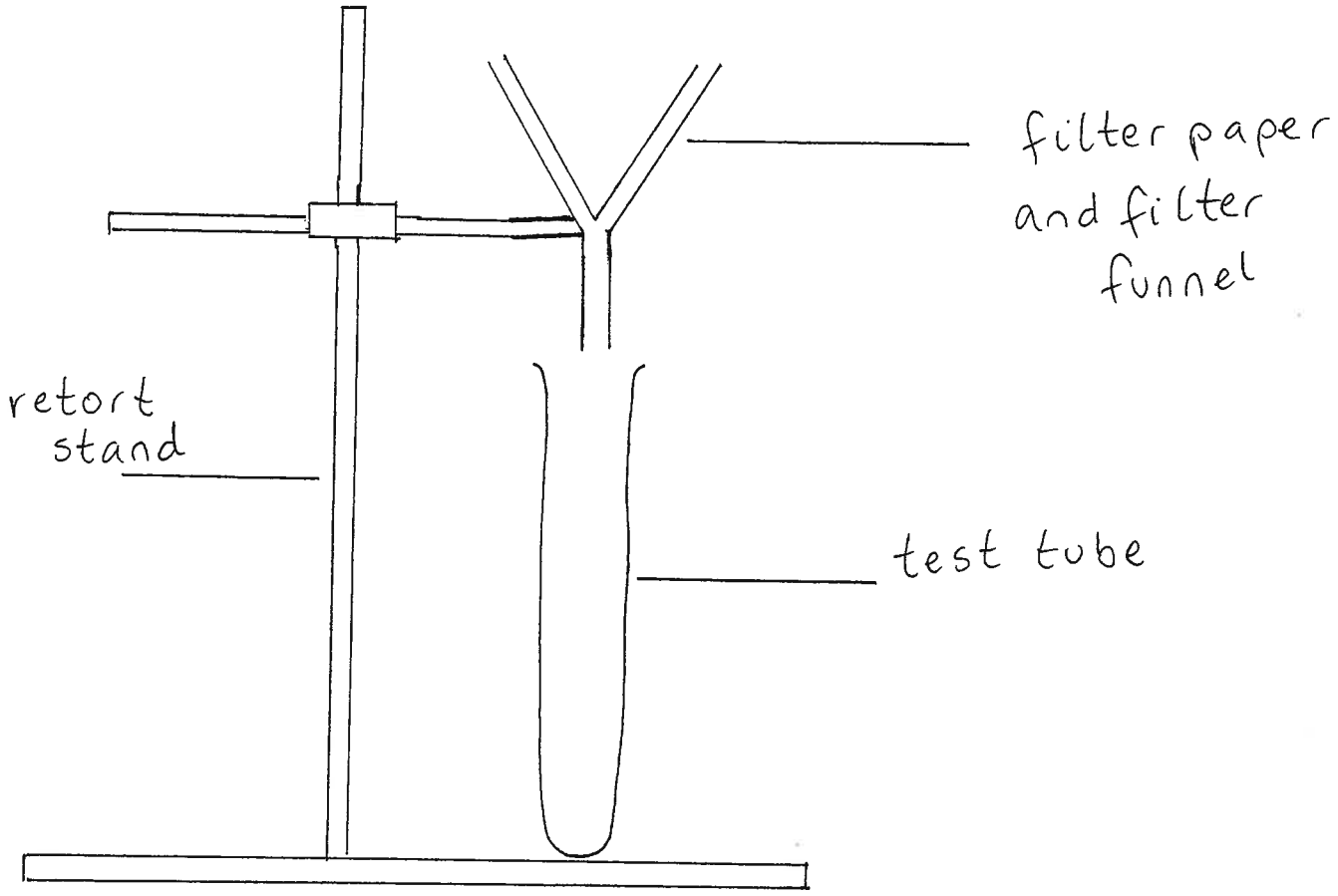
Draw a labeled scientific diagram of your experiment set up filtering the solution. (3 marks)

Use a lead pencil.

Use a ruler to draw lines to label each piece of equipment.

Use the guide below to show you how each piece of equipment should be drawn.





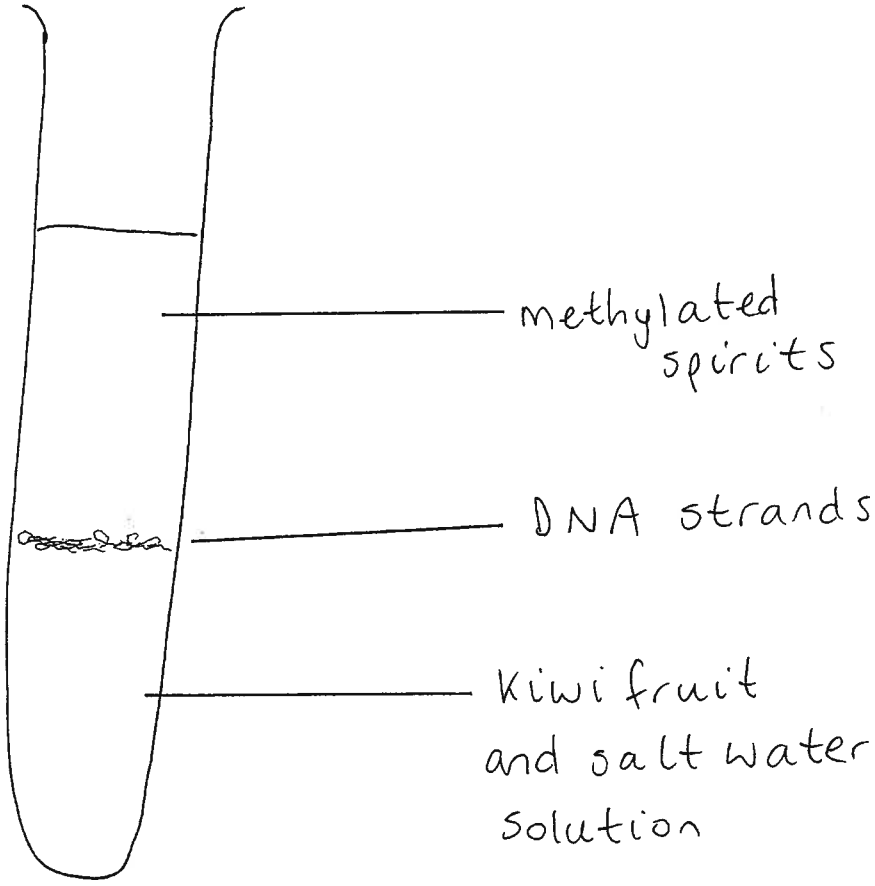
Describe how to fold a filter paper to put into a filter funnel. (3 marks)

Fold the filter in half to form a semi-circle then fold in half a second time to form a quarter of a circle. Open up one of the folds and place the cone-shaped filter paper into the filter funnel.

Once you have the final test tube and you can see the DNA, draw a labeled scientific diagram of the test tube and label the substances in it (methylated spirits, DNA, kiwi fruit). (3 marks)

Use a lead pencil.

Use a ruler to draw lines to label the different substances.



Discussion: (6 marks)

Describe two mistakes/errors that occurred.
Explain how these mistakes/errors affected the results.
Explain how these mistakes/errors could be avoided.

Written neatly. (1 mark)

Correct grammar and spelling. (1 mark)

Total mark: /21

Percentage: %

Teacher's comments: