NAME: ANSWERS DATE DUE: 25/2/2019

TEACHER:

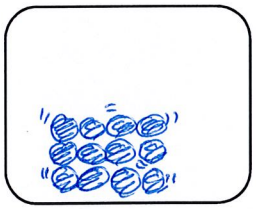
Year 8 Term 1 – Chemistry

/19

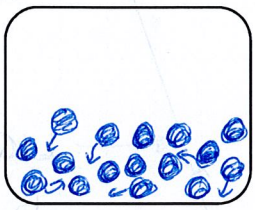
HOMEWORK SHEET No. 1 – SC 4 and 5

1. Draw 3 diagrams below of a solid, liquid, and a gas.

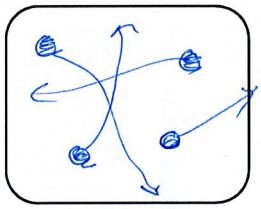
(a) The first diagram showing how the particles in a **solid** are arranged



(a) The second diagram showing how the particles in a **liquid** are arranged



(a) The third diagram showing how the particles in a **gas** are arranged



/9 Each diagram should show the arrangement of the particles, the amount of space between the particles, and arrows/lines to show the movement of the particles.

2. Students completed an experiment on the changes in states of H_2O – from ice, through water, to steam. They collected data on the temperature of the H_2O every minute. There data is listed in table 1.

Table 1: temperature of H_2O every minute.

Time (min)	Temperature (^{0}C)
0	0.5
1	1
2	1.5
3	2
4	12
5	21
6	35
7	50
8	63
9	77
10	80
11	95
12	99
13	100
14	99
15	100

/3 **(a)** Graph this data on the graph grid on page two. The axis are labelled for you and the first data point (and one other) are done as examples – continue for all data points.

/3 **(b)** On the graph draw a smooth line (it will be straight at times and curved at others) to show the trend of the data (this lines is called the trend line). The trend line does NOT join the dots together and it does NOT have to go through every data point.

/2 **(c)** On the graph label the sections of the trend line which show when the H_2O is changing it state. There will be two sections – one when the ice changes to water, the other when the water is changing to steam (water vapour).

/1 **(d)** On the graph label the section of the trend line which shows when the H_2O is heating up but not changing state.

(e) Explain why a solid such as ice change into a liquid (such as water) when it is heated? In your answer you should talk about the movement of the particles and the attractive forces between them.

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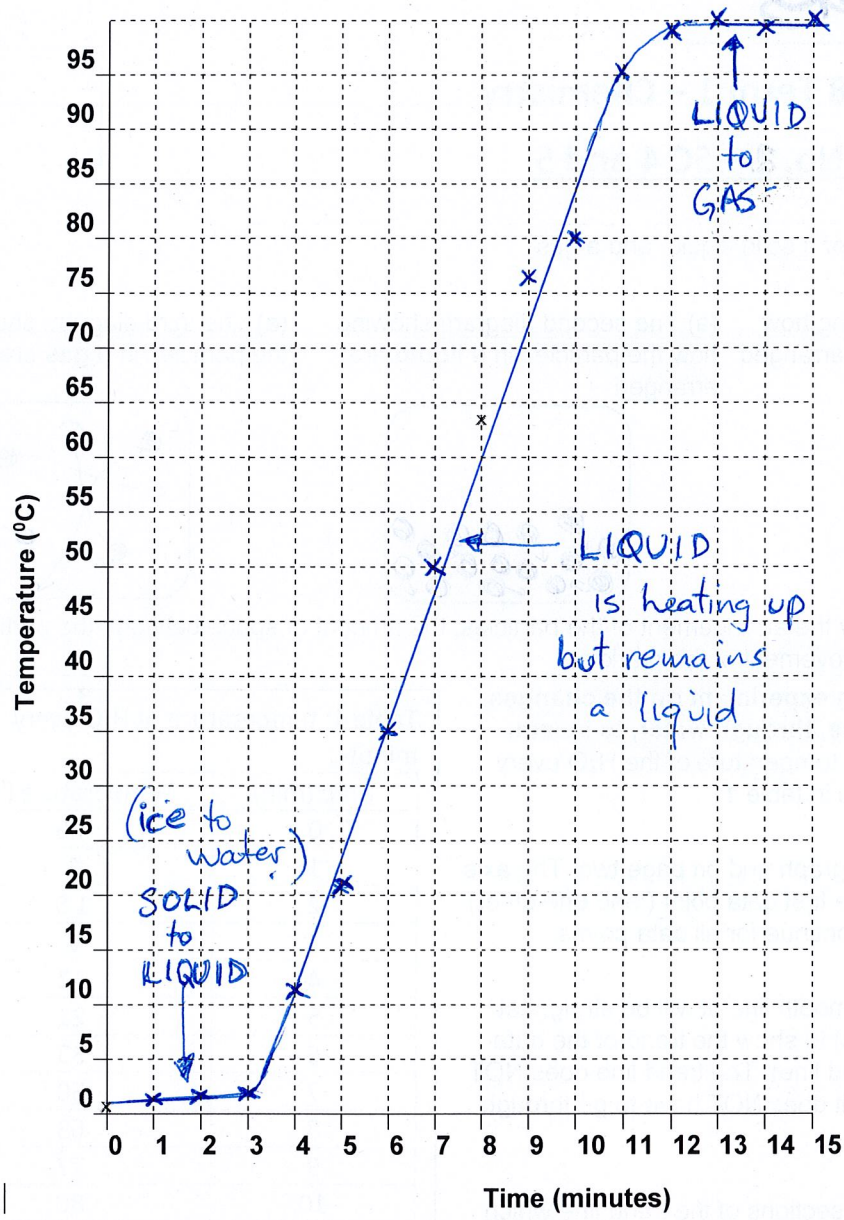
As the ice heats up the particles move faster. This means the particles ~~cons~~ are able to break free of the attractive forces holding them together. This allows the particles to move more freely – like a liquid rather than be locked in position like in a solid.


Temperature (°C)
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Time (minutes)
LIQUID to GAS
LIQUID is heating up but remains a liquid
(ice to water)
SOLID to LIQUID