Key

Artifact No.	Solvent Structure Score	Origin of Motion Score	Trajectories Score
1 (HS chem)	3	0	3
2 (Univ upper level bio)	2	0	0
3 (HS chem hon)	2	1	1
4 (Univ lower level chem)	4	2	1
5 (MS)	2	1	1
6 (Univ lower level phys)	4	1	1
7 (HS bio)	3	2	2
8 (HS AP chem)	2	2	2
9 (HS chem hon)	2	3	7
10 (MS)	3	0	7
11 (MS)	4	0	9

Example 1

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

c. Use words to explain where the <u>molecules' ability to move</u> comes from.

The breaking glass and it blend in the air

Drawing

One perfume molecule (not drawn to scale)

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

- The perfume have a strong smell and it just hit your nose.

Example 2

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

c. Use words to explain where the <u>molecules' ability to move</u> comes from.

molecules can move by charges

Drawing

One perfume molecule (not drawn to scale)

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

The molecules would spread everywhere and I would be bound to bump into the nose.

Example 3

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

d. Draw a picture to explain the movement of ONE perfume molecule going from the spill to your nose.

Please make sure to also represent the AIR in the room.

Drawing

One perfume molecule (not drawn to scale)

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

Because as the molecule raises they move with the wind.

Example 4

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

Drawing

One perfume molecule (not drawn to scale)

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

due to the molecular structure of the air and the ability of the perfume molecule to attach to the air molecule, the perfume is transported through the current of the room to the nose.

Example 5

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

c. Use words to explain where the molecules' ability to move comes from.

The molecules ability to move comes from any kind of air current in the room,

d. Draw a picture to explain the movement of ONE perfume molecule going from the spill to your nose.

Please make sure to also represent the AIR in the room.

Drawing

One perfume molecule (not drawn to scale)

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

It has those movements given by the air.

Example 6

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

One perfume molecule (not drawn to scale)

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

because breating in will cause air to flow towards the nose, and such movement will carry the perfume molecule towards nose along with air molecules

Example 7

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

c. Use words to explain where the <u>molecules' ability to move</u> comes from.

The ability for the molecule to move comes from gravity and the atoms that makeup the perfume

Drawing

One perfume molecule (not drawn to scale)

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

because oxygen is being sucked up by my nose in that direction. if there were a fan blowing the molecule the opposite way then the molecule wouldn't get to my nose

Example 8

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

c. Use words to explain where the <u>molecules' ability to move</u> comes from.

The perfume molecules spread b/c they have their ~~em~~ own energy applied w/ outside forces the blows the smell from one point to another.

Please make sure to also represent the AIR in the room.

Drawing

One perfume molecule (not drawn to scale)

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

because the air blow is coming from the left → pushing onto the molecule.

Example 9

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

c. Use words to explain where the molecules' ability to move comes from.

The molecules' ability to move comes from its state of matter.

Drawing

One perfume molecule (not drawn to scale)

air = empty space

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

The molecule of perfume does not have specific movements, I drew it random.

Example 10

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

c. Use words to explain where the molecules' ability to move comes from.

It comes from expansion. The molecules expand because they are put in a bigger space.

Drawing

One perfume molecule (not drawn to scale)

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

The molecule can basically go anywhere since the space is big.

Example 11

Imagine that someone breaks a glass of perfume on one side of a room and that you are standing on the other side of the room. You begin to smell it after a short while because the perfume molecules get from the spill to your nose.

c. Use words to explain where the molecules' ability to move comes from.

The molecule's ability to move comes other molecules & other objects because the molecules bounce around and off each other. there is alot of space in the air for the molecules to move around.

Drawing

One perfume molecule (not drawn to scale)

e. Explain why the molecule of perfume has the specific movements that you just drew in part d.

I drew the molecule of perfume to a specific movement because the perfum molecule is going to bounce all over the air molecule's in the room.

Example 12

c. Use words to explain where the molecules' ability to move comes from.

The movement of the molecules rest in the "bouncing off" of air molecules

Drawing

One perfume molecule (not drawn to scale)