PFAS 1 Layout Mat

PFAS molecules look like dragons! They have big heads and long tails.

1. **Build a backbone of 8 carbon atoms forming a long tail. Place it on its picture.**

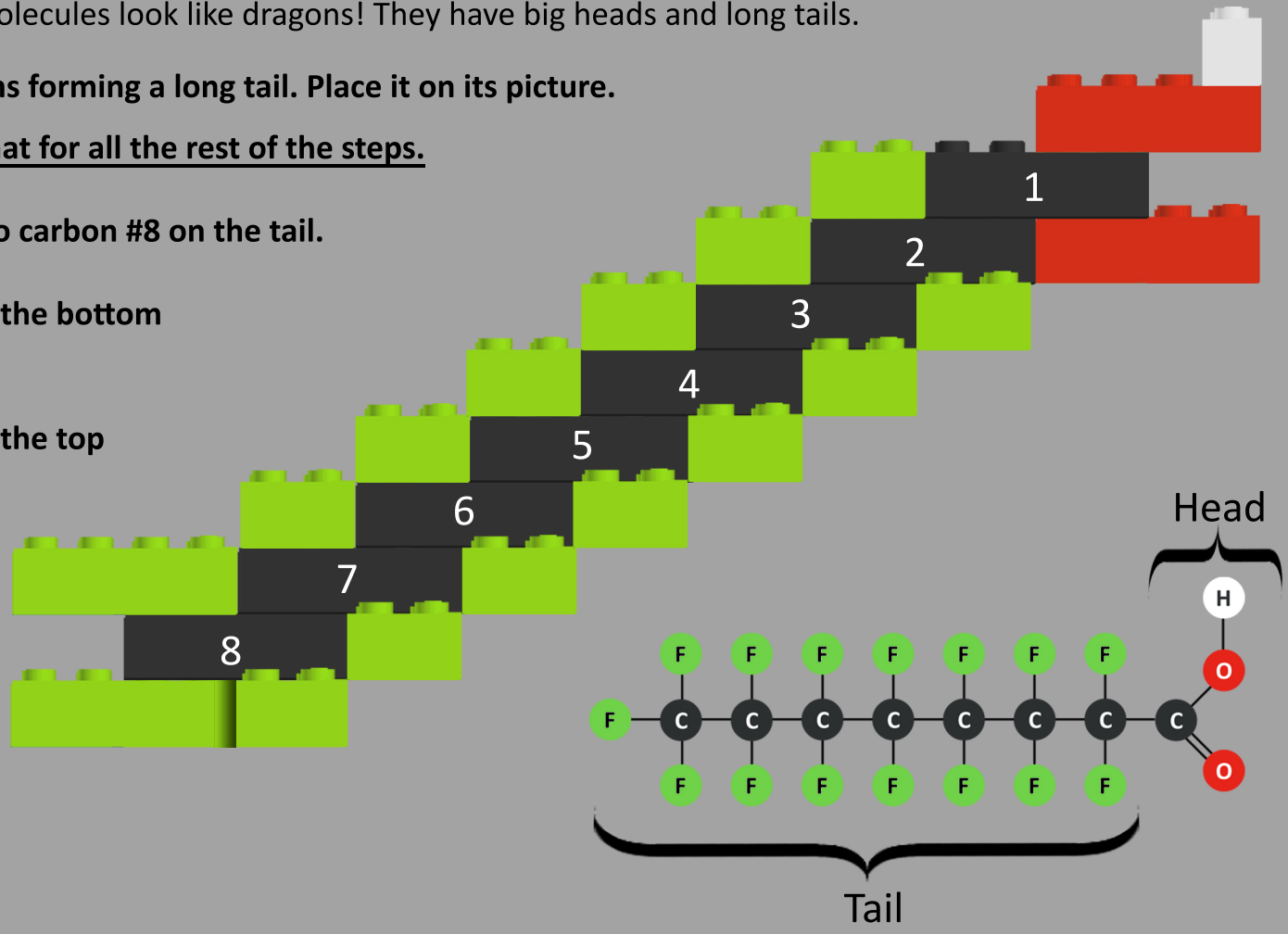
   <u>Keep the black bricks flat on the mat for all the rest of the steps.</u>

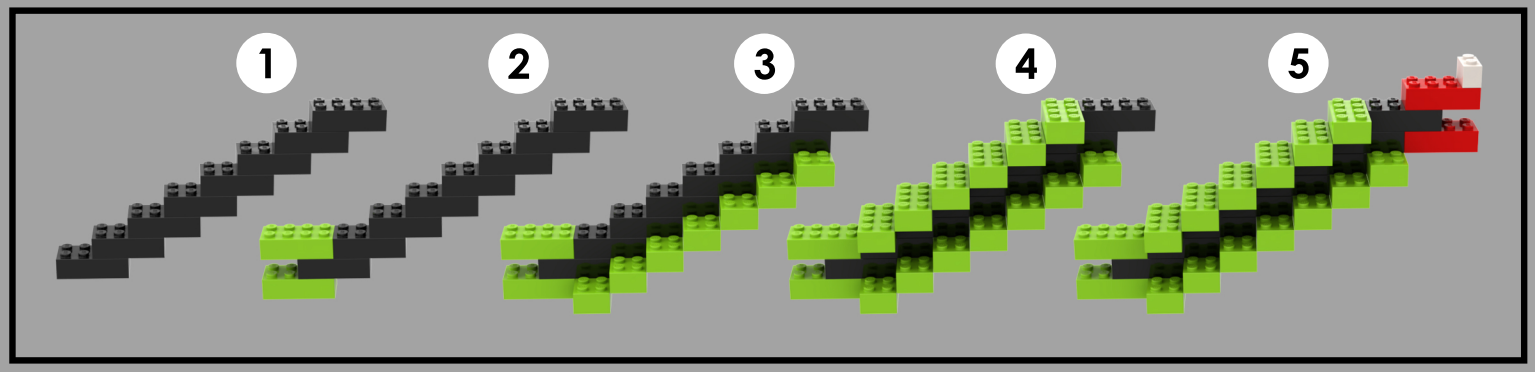
2. **Add 2 fluorine atoms <u>lengthwise</u> to carbon #8 on the tail.**

3. **Add 7 fluorine atoms <u>crosswise</u> to the bottom of each carbon atom as shown.**

4. **Add 6 fluorine atoms <u>crosswise</u> to the top of each carbon atom as shown.**

5. **Add 2 oxygen atoms and 1 hydrogen atom to carbon #1 on the head.**





Atom Key

- Carbon (C)
- Oxygen (O)
- Fluorine (Fl)
- Hydrogen (H)

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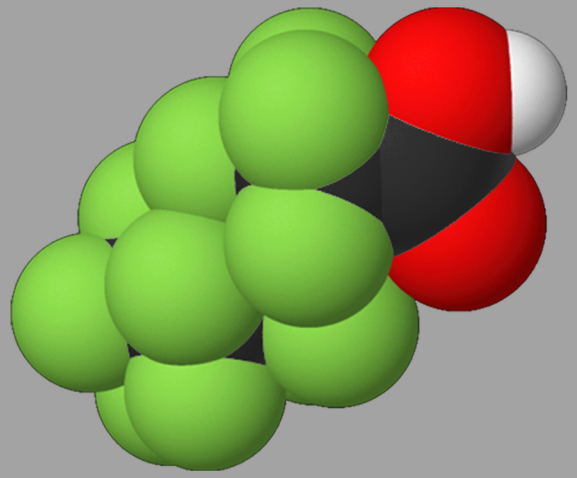
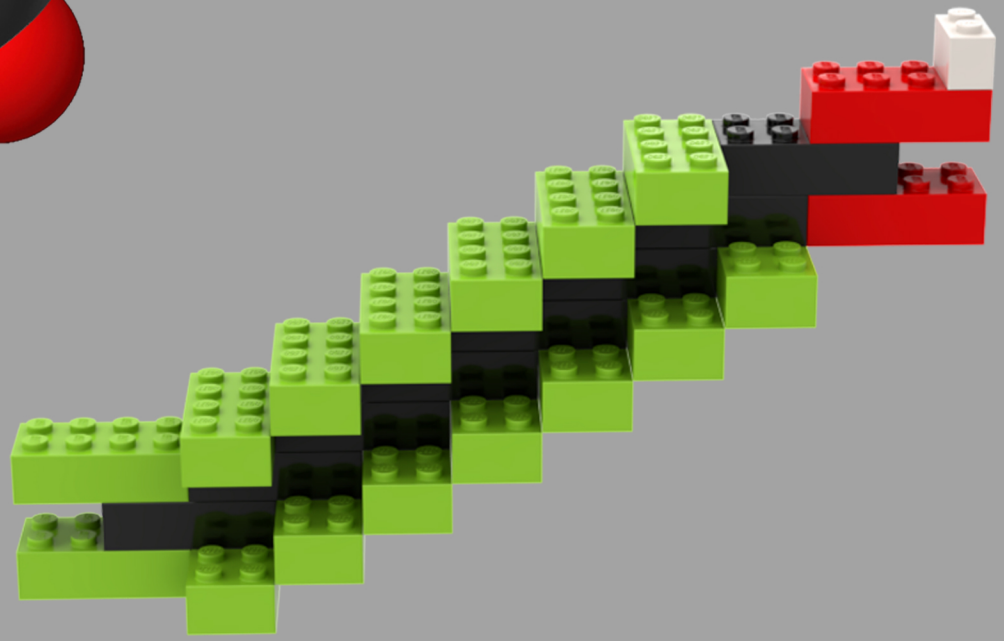
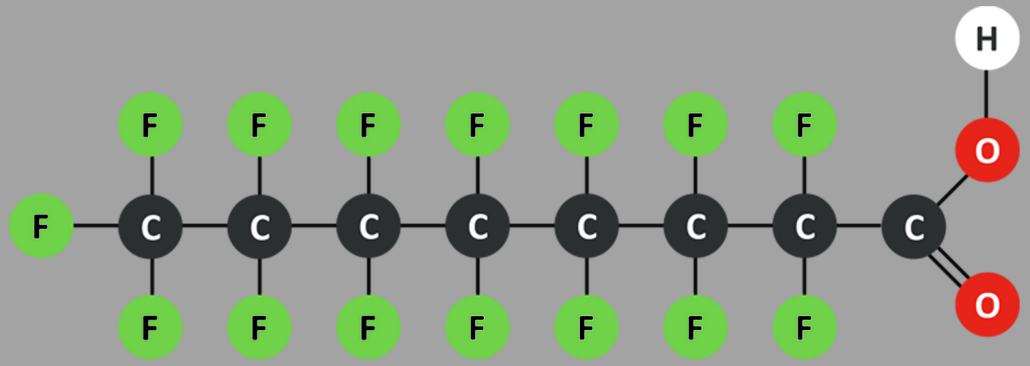
PFOA

Perfluorooctanoic Acid







PFAS 2 Layout Mat

PFAS molecules look like dragons! They have big heads and long tails.

1. **Build a backbone of 8 carbon atoms forming a long tail. Place it on its picture.**

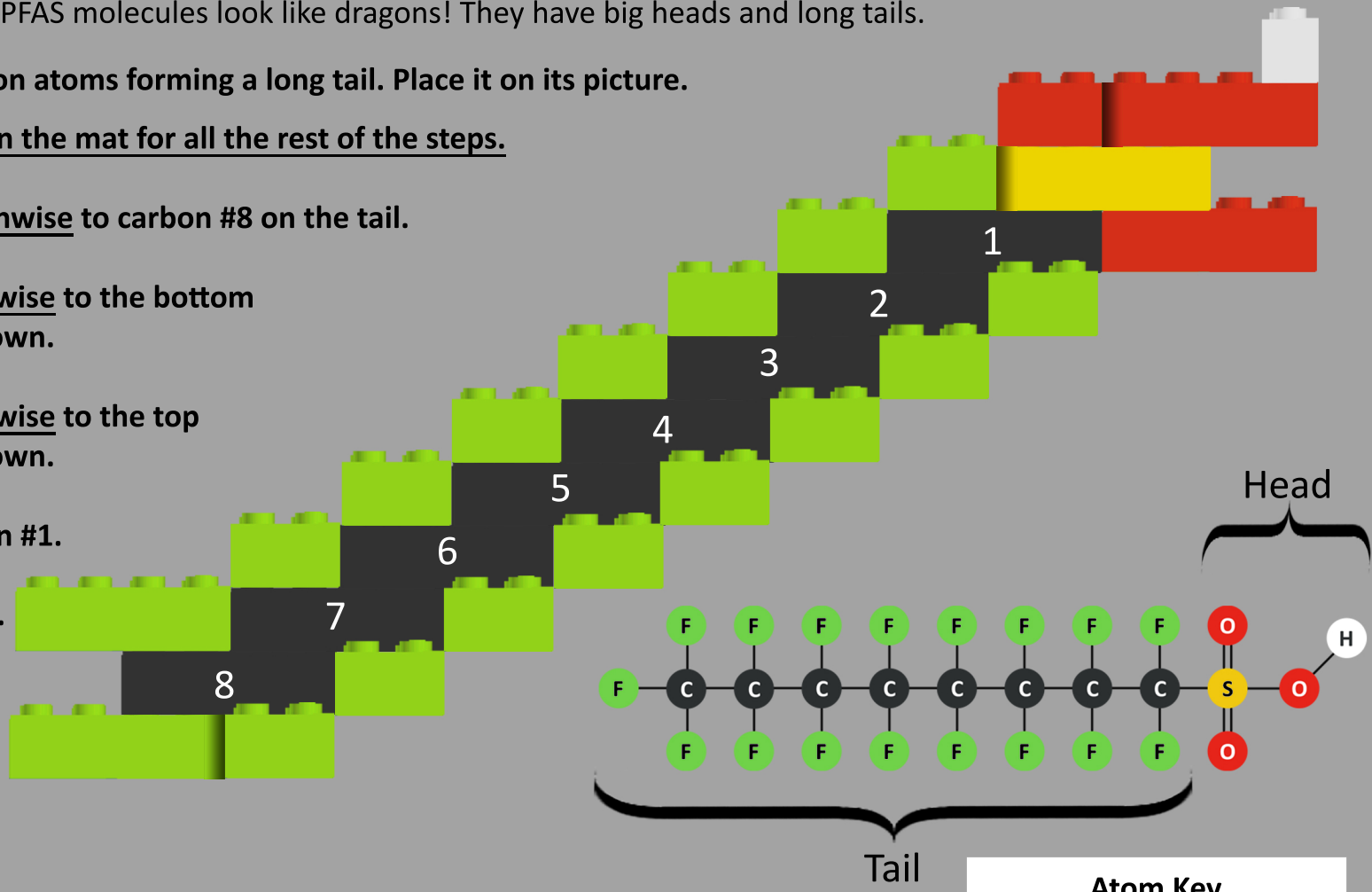
   <u>Keep the black bricks flat on the mat for all the rest of the steps.</u>

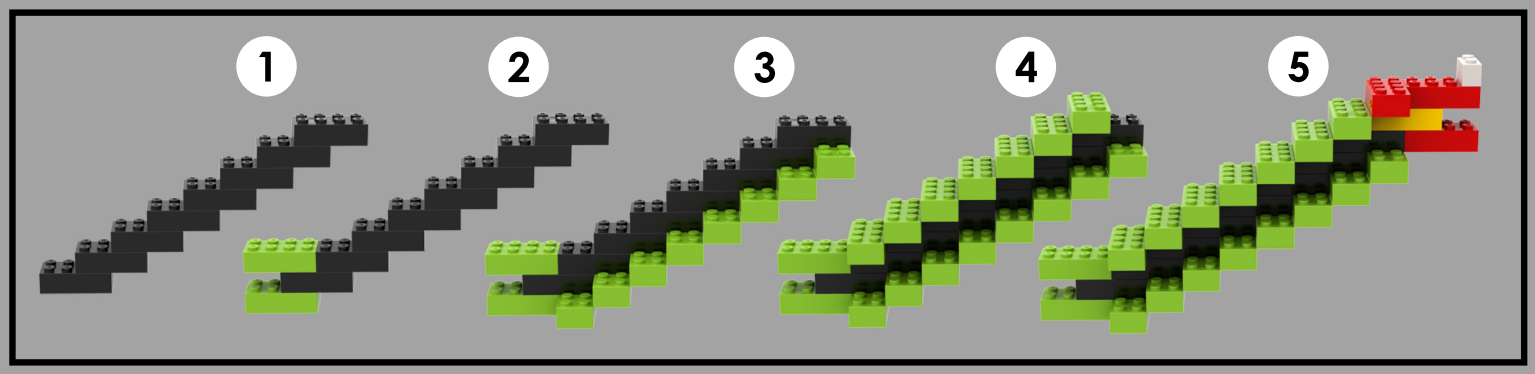
2. **Add 2 fluorine atoms <u>lengthwise</u> to carbon #8 on the tail.**

3. **Add 8 fluorine atoms <u>crosswise</u> to the bottom of each carbon atom as shown.**

4. **Add 7 fluorine atoms <u>crosswise</u> to the top of each carbon atom as shown.**

5. **Add 1 sulfur atom to carbon #1. Add 3 oxygen atoms and 1 hydrogen atom as shown.**





Atom Key

- Carbon (C)
- Oxygen (O)
- Sulfur (S)
- Fluorine (Fl)
- Hydrogen (H)

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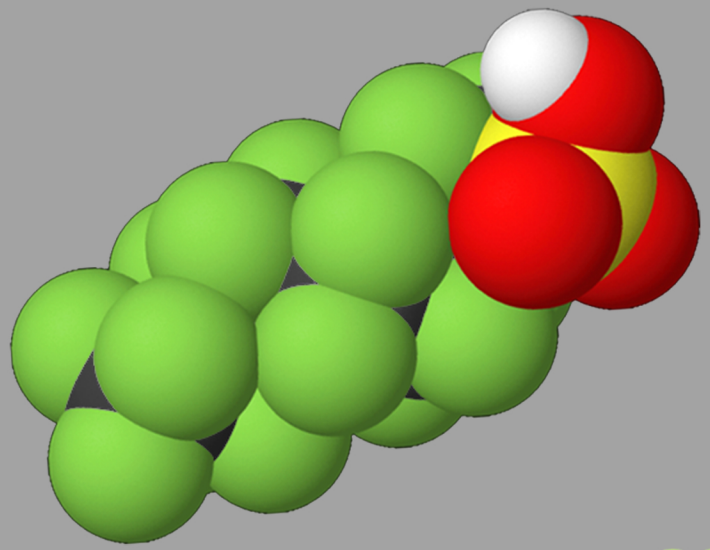
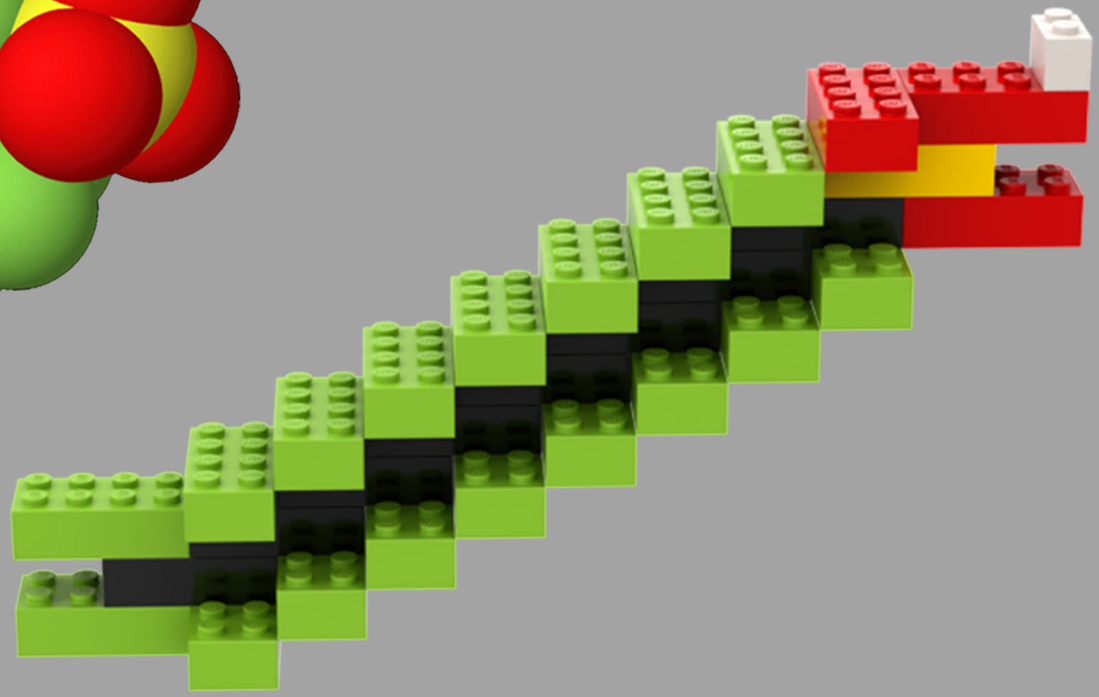
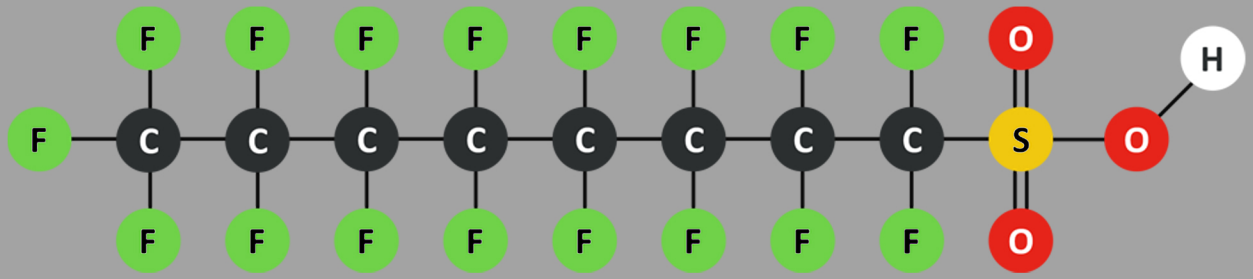
PFOS

Perfluorooctane Sulfonate







PFAS 3 Layout Mat

PFAS molecules look like dragons! They have big heads and long tails.

1. **Build a backbone of 9 carbon atoms forming a long tail. Place it on its picture.**

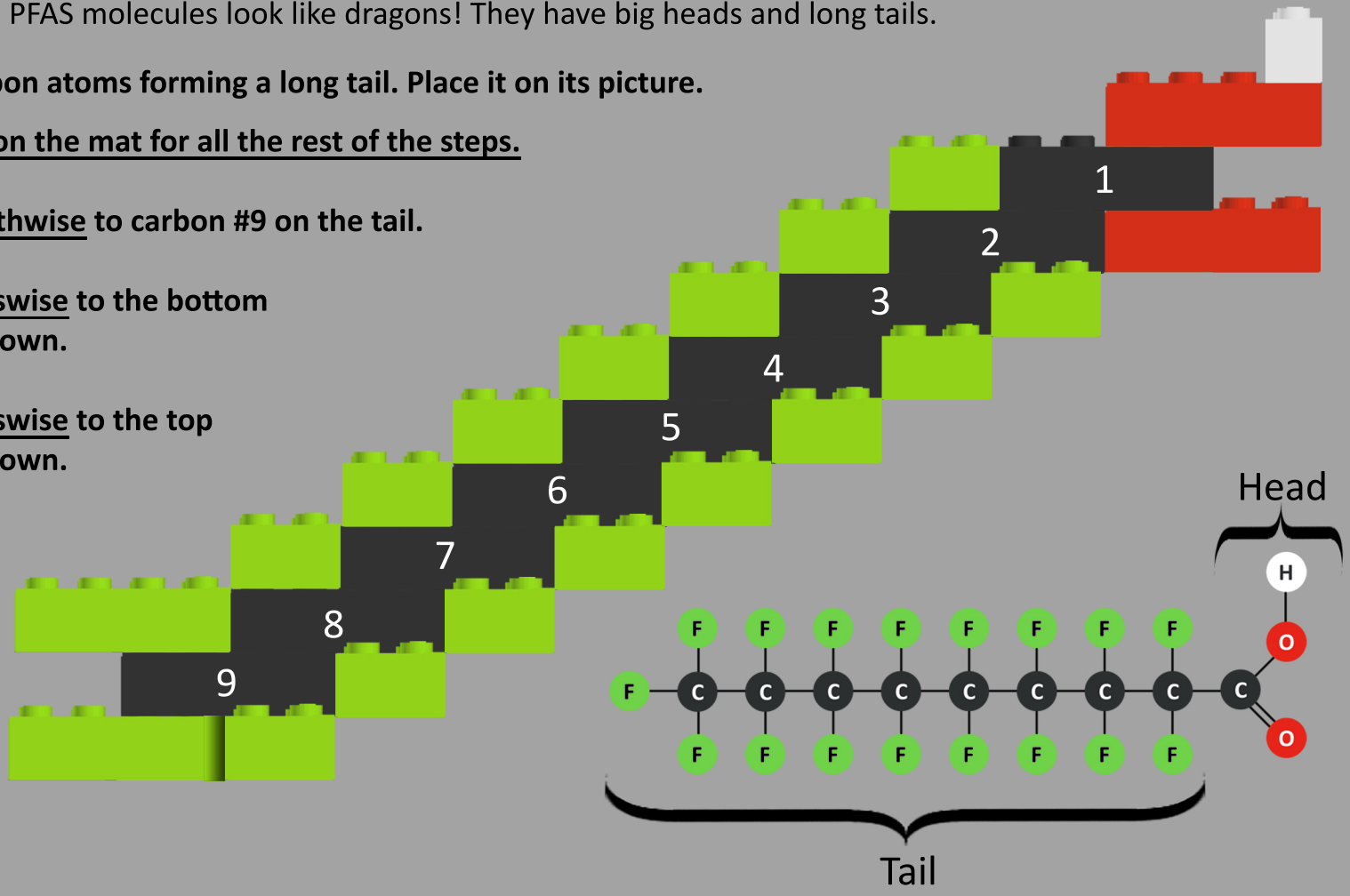
   <u>Keep the black bricks flat on the mat for all the rest of the steps.</u>

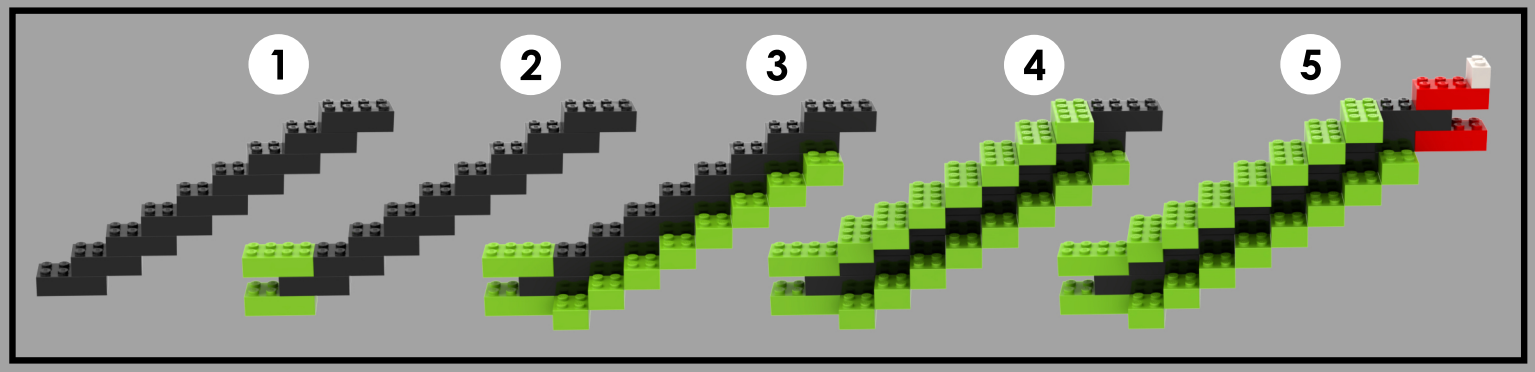
2. **Add 2 fluorine atoms <u>lengthwise</u> to carbon #9 on the tail.**

3. **Add 8 fluorine atoms <u>crosswise</u> to the bottom of each carbon atom as shown.**

4. **Add 7 fluorine atoms <u>crosswise</u> to the top of each carbon atom as shown.**

5. **Add 2 oxygen atoms and 1 hydrogen atom to carbon #1 on the head.**





Atom Key

- Carbon (C)
- Oxygen (O)
- Fluorine (Fl)
- Hydrogen (H)

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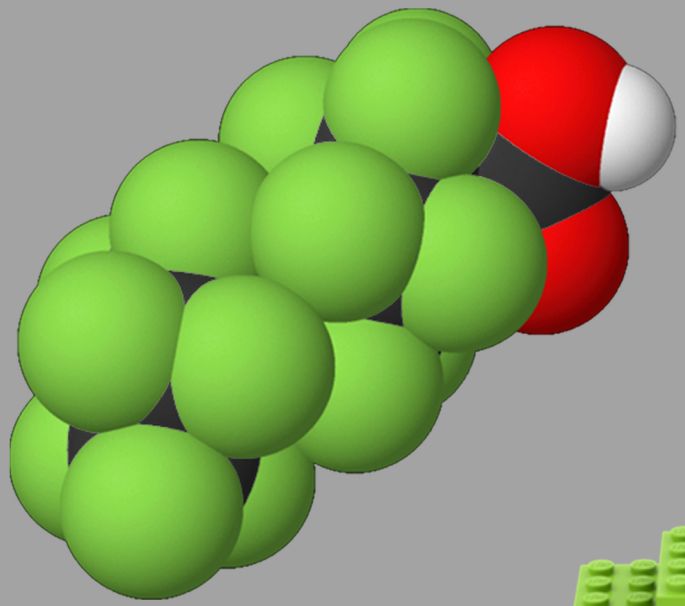
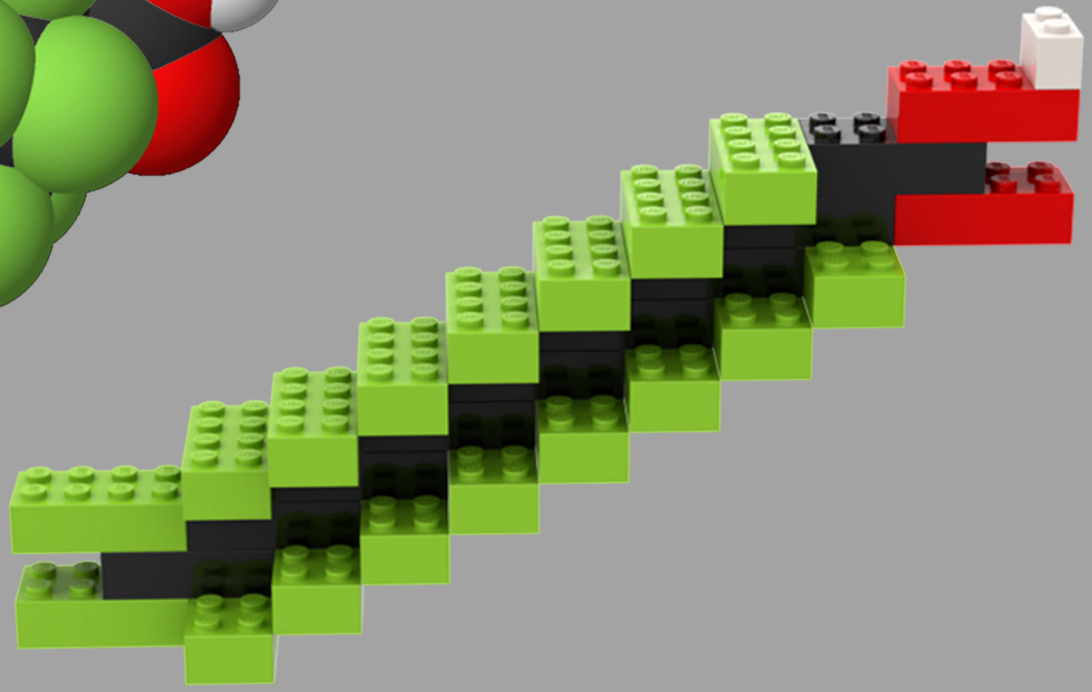
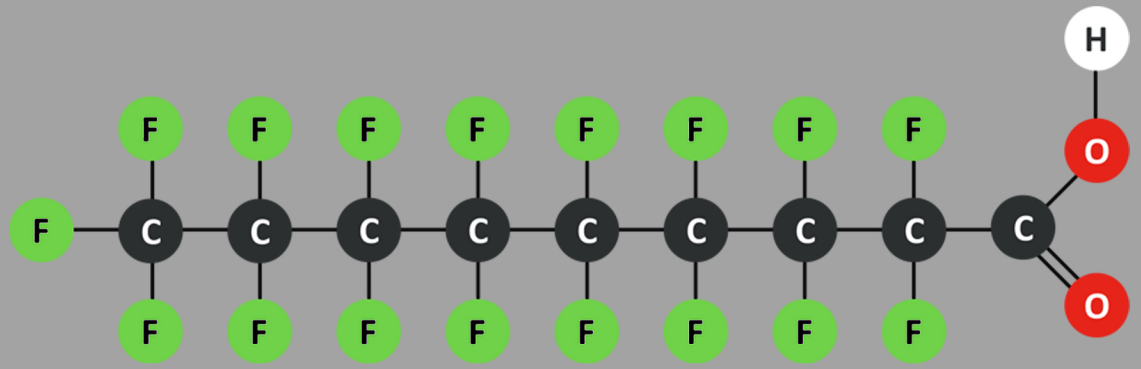
PFNA

Perfluorononanoic Acid







PFAS 4 Layout Mat

PFAS molecules look like dragons! They have big heads and long tails.

1. **Build a backbone of 6 carbon atoms forming a long tail. Place it on its picture.**

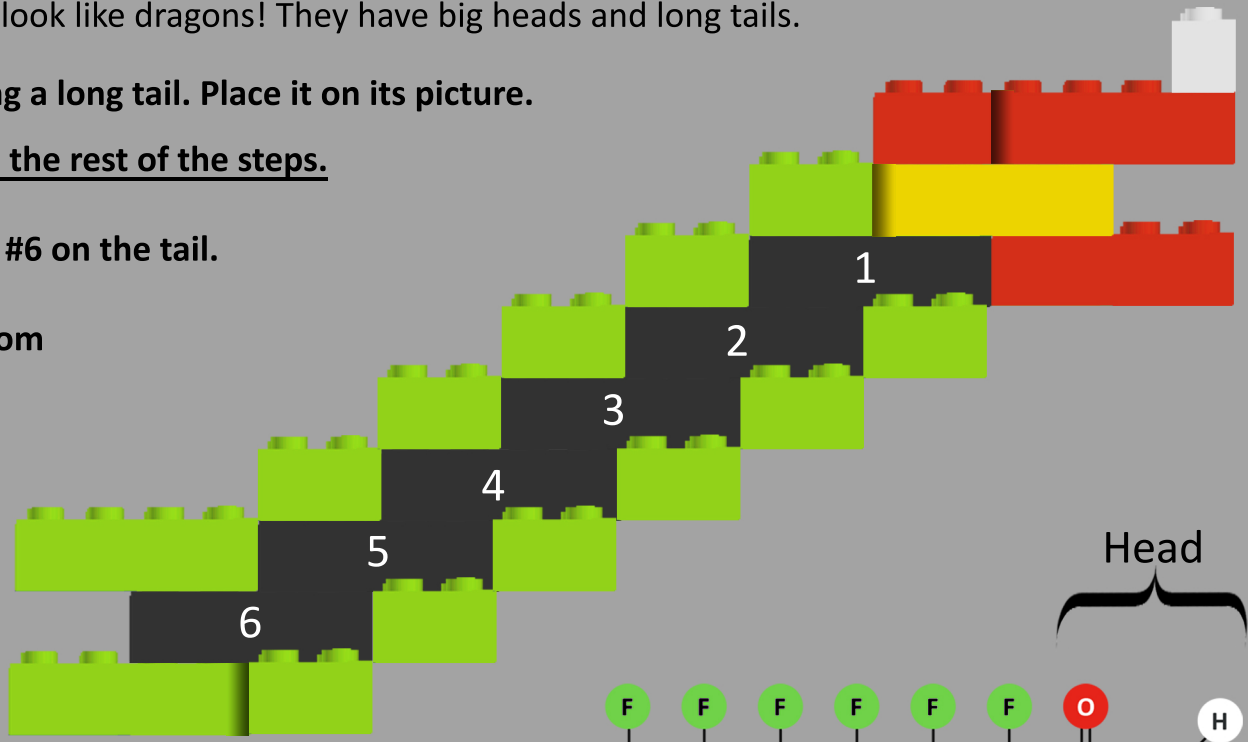
   Keep the black bricks flat on the mat for all the rest of the steps.

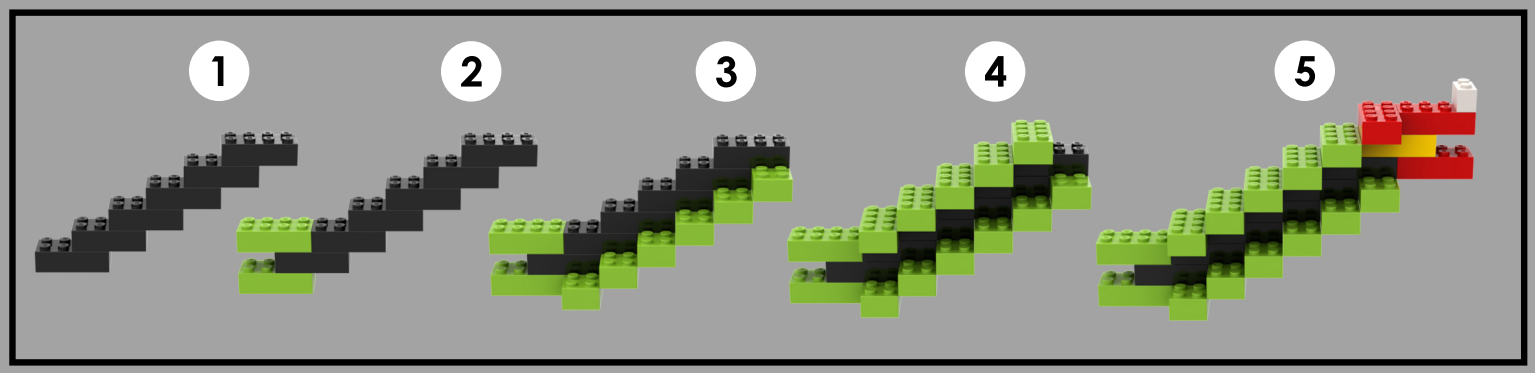
2. **Add 2 fluorine atoms lengthwise to carbon #6 on the tail.**

3. **Add 6 fluorine atoms crosswise to the bottom of each carbon atom as shown.**

4. **Add 5 fluorine atoms crosswise to the top of each carbon atom as shown.**

5. **Add 1 sulfur atom to carbon #1. Add 3 oxygen atoms and 1 hydrogen atom as shown.**





Atom Key

- Carbon (C)
- Oxygen (O)
- Sulfur (S)
- Fluorine (Fl)
- Hydrogen (H)

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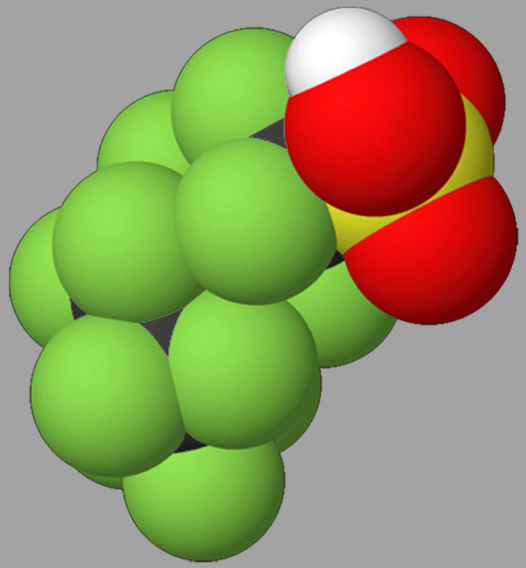
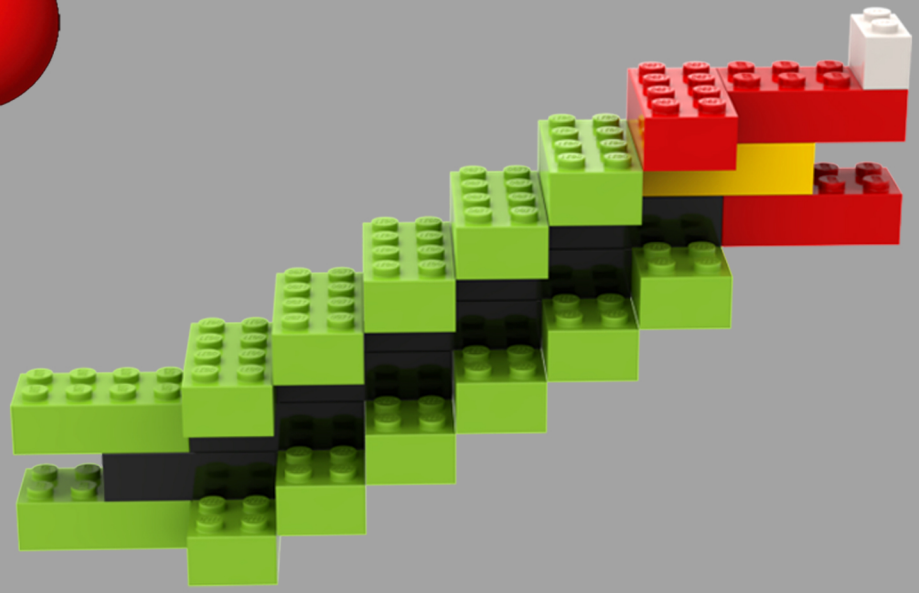
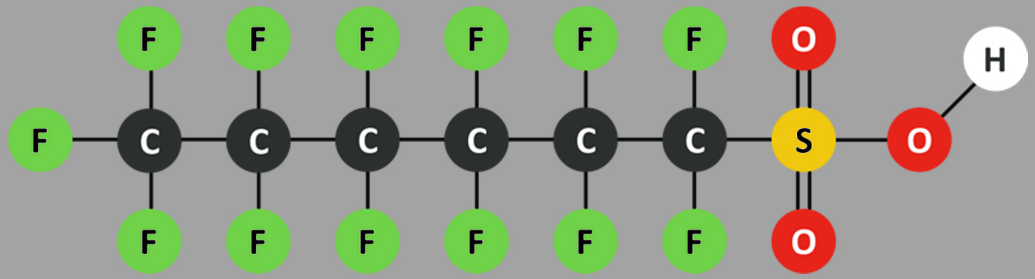
PFHxS

Perfluorohexane Sulfonate







PFAS 5 Layout Mat

PFAS molecules look like dragons! They have big heads and long tails.

1. **Build a backbone of 7 carbon atoms forming a long tail. Place it on its picture.**

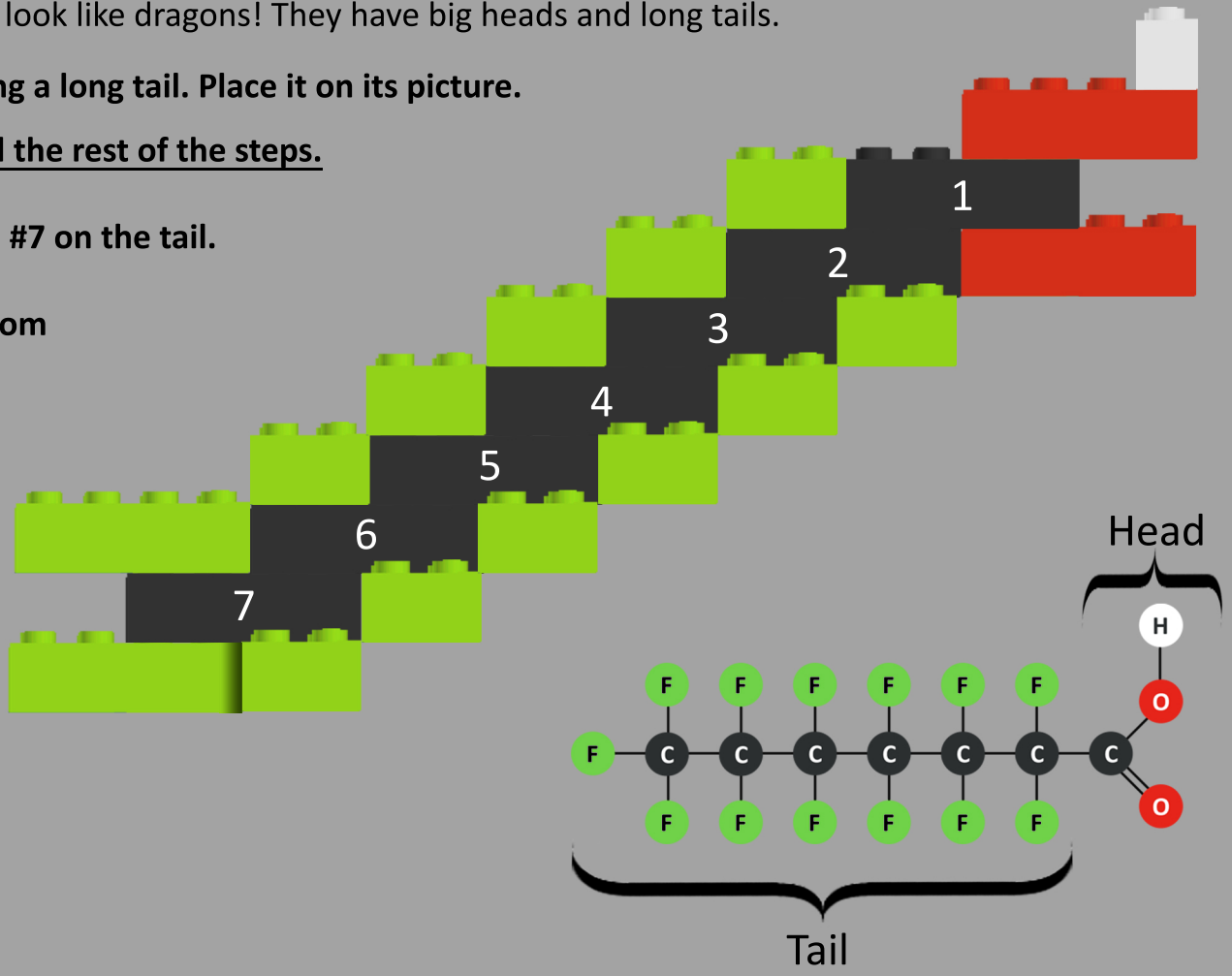
   <u>Keep the black bricks flat on the mat for all the rest of the steps.</u>

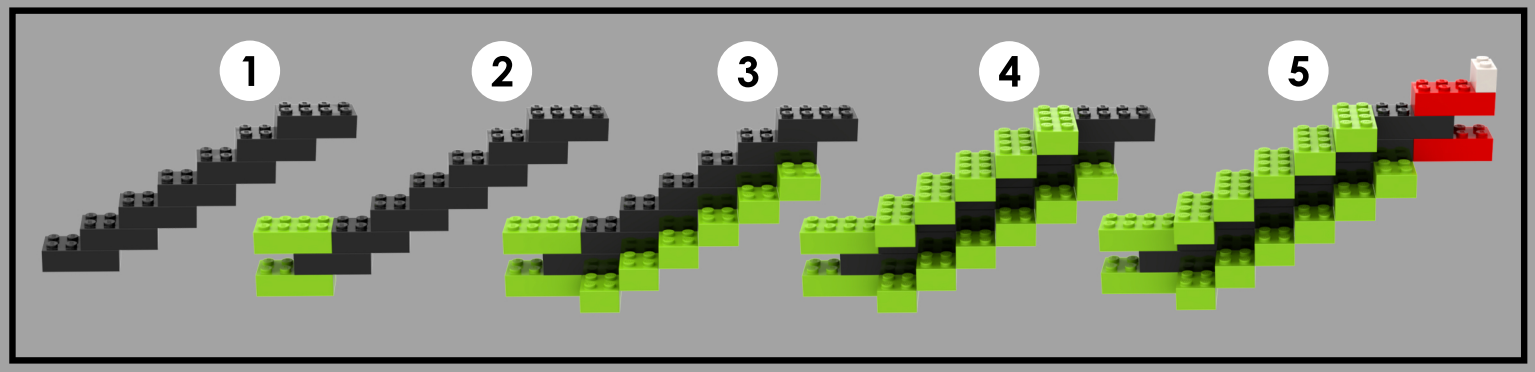
2. **Add 2 fluorine atoms <u>lengthwise</u> to carbon #7 on the tail.**

3. **Add 6 fluorine atoms <u>crosswise</u> to the bottom of each carbon atom as shown.**

4. **Add 5 fluorine atoms <u>crosswise</u> to the top of each carbon atom as shown.**

5. **Add 2 oxygen atoms and 1 hydrogen atom to carbon #1 on the head.**





Atom Key

- Carbon (C)
- Oxygen (O)
- Fluorine (Fl)
- Hydrogen (H)

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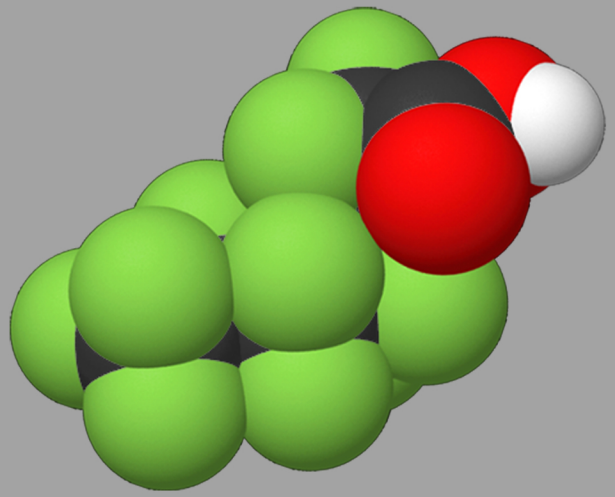
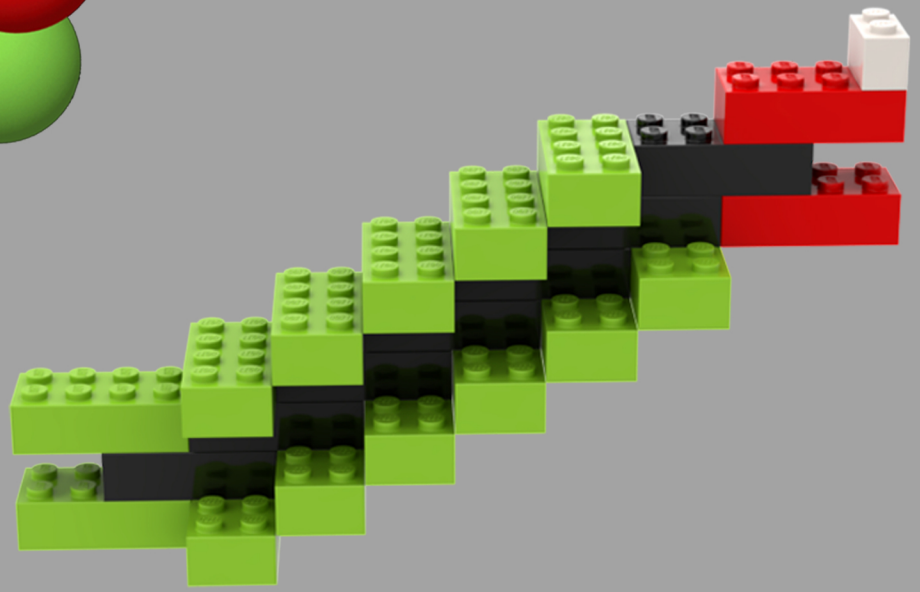
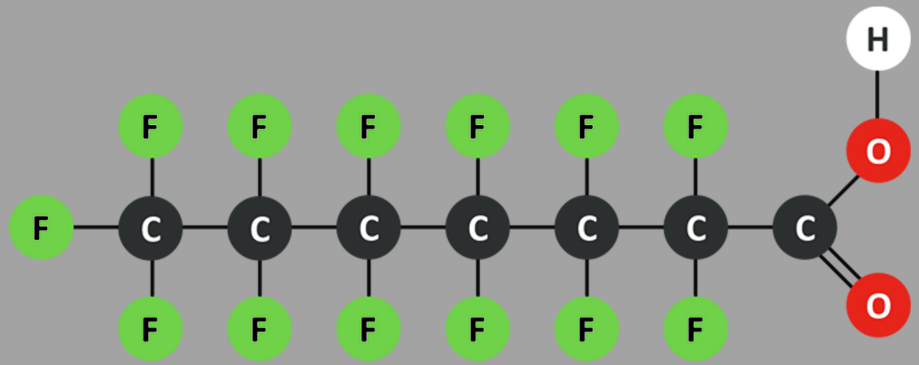
PFHpA

Perfluoroheptanoic Acid







PFAS 6 Layout Mat

PFAS molecules look like dragons! They have big heads and long tails.

1. **Build a backbone of 10 carbon atoms forming a long tail. Place it on its picture.**

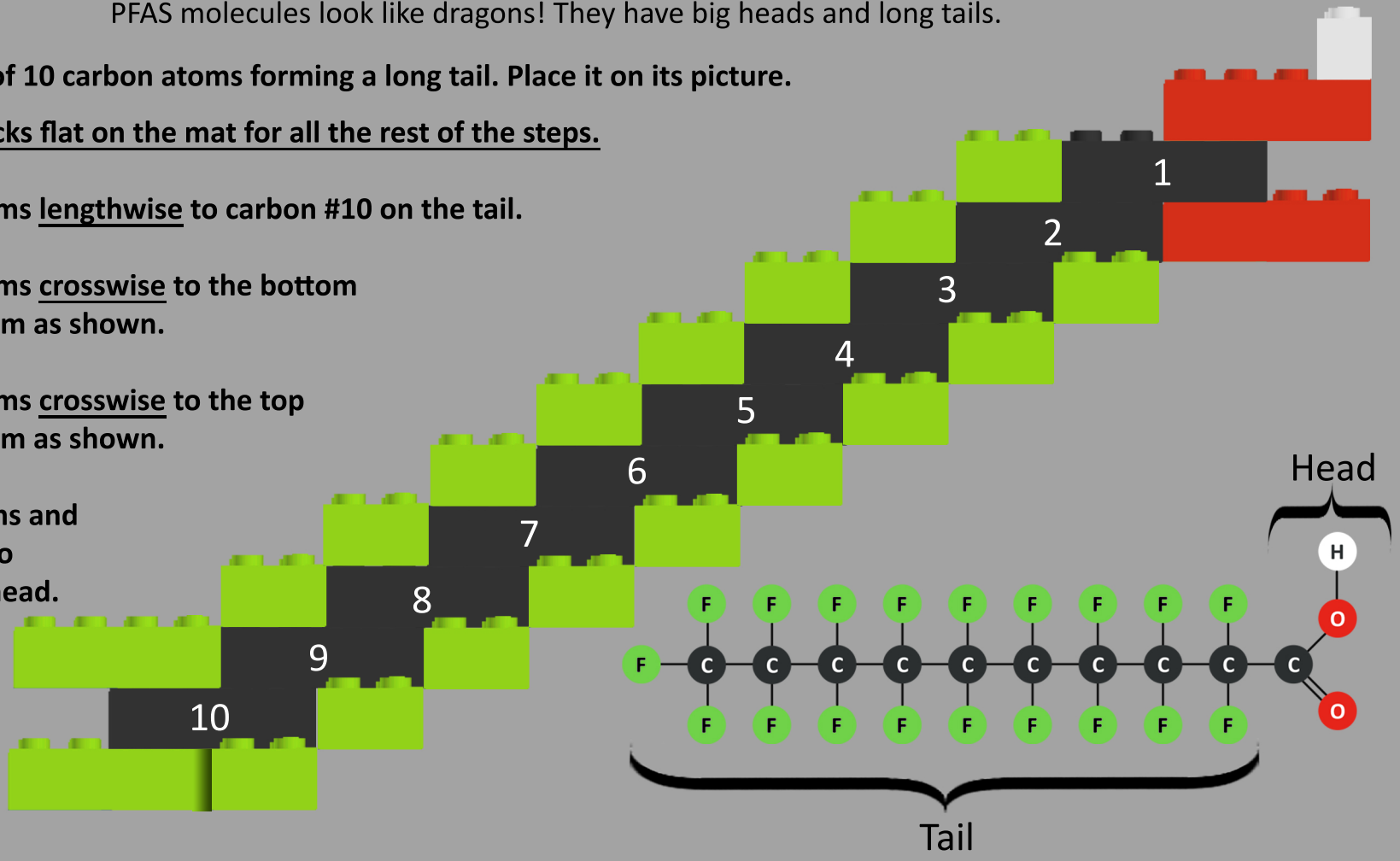
   Keep the black bricks flat on the mat for all the rest of the steps.

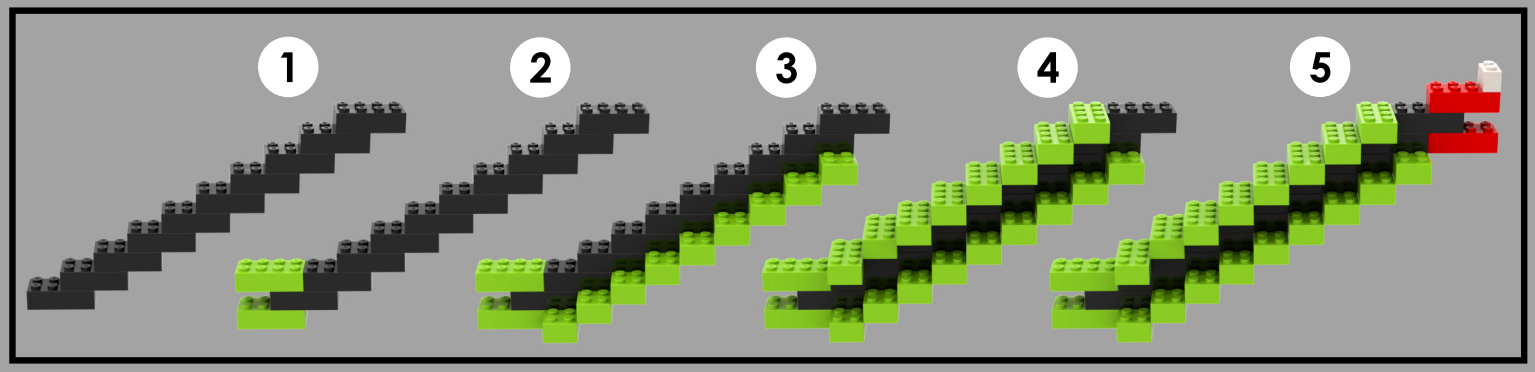
2. **Add 2 fluorine atoms lengthwise to carbon #10 on the tail.**

3. **Add 9 fluorine atoms crosswise to the bottom of each carbon atom as shown.**

4. **Add 8 fluorine atoms crosswise to the top of each carbon atom as shown.**

5. **Add 2 oxygen atoms and 1 hydrogen atom to carbon #1 on the head.**





Atom Key

- Carbon (C)
- Oxygen (O)
- Fluorine (Fl)
- Hydrogen (H)

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PFDA

Perfluorodecanoic Acid