Frankenflower

A Mad Botanist's Guide to Flower Anatomy
by Ari Mulch and Dr. V. Frankenflower

Flowers come in all shapes and sizes, but they all have the same parts.

1. ***Leaves:*** Absorb sunlight to produce energy through a process called photosynthesis
2. ***Petals:*** Colorful modified leaves for attracting pollinators.
3. ***Stamen:*** Produces pollen, and is made up of an ***anther (3a)*** which produces pollen and is supported by the ***filament (3b)***.
4. ***Pistil:*** Collects pollen on a sticky ***stigma (4a)***. Pollen travels down the ***style (4b)*** to the ovary ***(4c)*** to fertilize an ***ovule (4d)*** which will eventually form a fruit, and seeds.
5. ***Sepal:*** Modified leaves that enclose a flower. They are often, but not always, green. When they closely resemble petals, they are called ***tepals***.
6. ***Receptacle:*** Where the stalk, or peduncle, connects to other parts of the flower.

We must be careful meddling with forces greater than us, for we could unleash an ***INVASIVE SPECIES*** that would swallow up the entire world
MUAHAHAHAHA!!!

Doctor! Calm yourself!!!

Pssst... Flip this zine inside out and turn to page 8 to design your Frankenflower.

Leaves

Leaves are like solar panels for plants: they produce energy by turning sunlight, air, and water into sugar in a process called ***photosynthesis***. Chlorophyll inside leaves absorbs sunlight, and gives leaves their green color.

it's unknown why leaves develop different shapes. We do know that leaf shape is an inherited trait, so plants in the same family tend to have similarly shaped leaves.

Petals

Petals' main job is to attract pollinators, and they come in a huge variety of shapes, sizes, and colors to suit different pollinators' tastes. A long, tube shaped flower might attract a fly with a long tongue. Some flowers have bullseye markings that say "land here!!!"

Sometimes, what you think is a petal, is actually a bract. Bracts may protect the flower, or they can be big and showy to attract pollinators to small flowers.

Stamens & Pistils

Pollen grains are produced by stamens, then they are carried by wind or pollinators to a pistil. If conditions are right, the pollen grain ***germinates*** and starts to grow its pollen tube down the style.

Once it reaches the ovary, the pollen grain fertilizes an ovule, and the flower starts to form a seed.

Now that my devoted assistant has taught you about flower anatomy, it is time for you to design your very own
FRANKENFLOWER

But know this, my budding botanists, the way plants look isn't random, but is in fact the result of millions of years of adapting to their environment. Humans have manipulated plants to be better for food, shelter, or to be more beautiful.

Let us begin with where your flower will grow. What is the climate like? Does it live somewhere wet or dry? will it need to survive frigid cold or blazing heat, or both? Perhaps your flower grows from the stone and concrete of the city, or it may live a sheltered life in a greenhouse.

How does your flower meet its needs for water, nutrients, and sunlight? Bromeliads form a cup-like tank to collect water instead of competing with other plants with massive root systems.

Most plants get their energy through photosynthesis, but Monotropa unifiora, or ghost pipe, is parasitic and feeds off a kind of fungus.

Carrion plants, like the Stapelia hirsuta, or starfish flower, mimick the look and smell of rotting flesh to attract flies.

How does your flower attract animals to pollinate it? Epiphyllum oxypetalum, or queen of the night, blooms only at night, when its pollinator, bats are awake.

How does your plant protect itself from animals that may harm it? The spines on cacti are modified leaves evolved to keep thirsty animals from accessing the precious water inside them.

other plants evolve chemical defenses. One you've probably encountered is capsaicin, produced by chili peppers to keep animals from eating them!

Is there anything unique about your plant? Anything that sets it apart from other plants, even plants in its own family? For example, mimosa pudica, or the sensitive plant closes its leaves tight when touched.

Come now my pupils... it's time to unveil your creation. Tonight we throw the gauntlet of science into the frightful face, of death itself!

IFLOR, THROW THE SWITCH!

Yes, Doctor!

LIFE! LIFE I SAY! GIVE THEIR CREATION... LIFE!

Draw your Frankenflower here!

Ahem, yes of course.

When building your Frankenflower, you must consider how it adapts to survive its environment.

We will now discuss some of those adaptations, and you may use the empty space, or your ***Nature Journal***, to brainstorm ideas for your creation.