PROTISTA

STRUCTURE

- SOME MULTICELLULAR AND MACROSCOPIC (SEAWEED)
- MOST ARE UNICELLULAR AND MICROSCOPIC

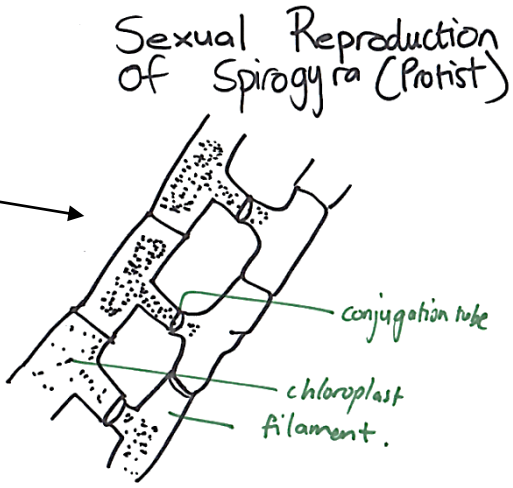
- PROTOZOANS- ANIMAL LIKE AND MOVE USING FINGER LIKE PROJECTIONS (PSEUDOPODIA) E.G AMOEBA
- DINONFLAGELLAS (MARINE PLANKTON) WITH FLAGELLA ARRANGED IN VARIOUS PATTERNS
- GREEN ALGAE. SPIROGYRA APPEAR IN LONG THIN FILAMENTS.
- DIATOMS APPEAR SYMMETRICAL/GLASS-LIKE
- SLIME MOULD(MASS OF AMOEBOID CELLS) LOOKS LIKE FUNGI
- EUGLENA AND SPIROGYRA HAVE CHLOROPLAST

CHARACTERISTICS

- MOST ARE AQUATIC
- SOME ARE AUTOTROPHICS
- SOME ARE HETEROTROPHIC(PARASITIC –ENTAMOEBA HISTOLYTICA)
- SLIME MOULDS ENGULF FOOD BY PHAGOCYTOSIS

REPRODUCTION

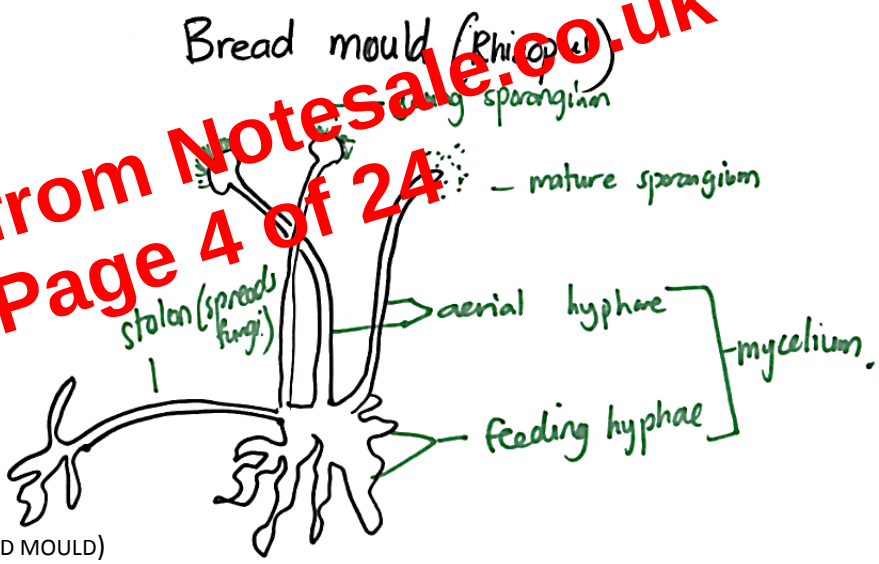
- BINARY FISSION – AMOEBA
- ASEXUAL AND SEXUAL – BROWN ALGAE



FUNGI

STRUCTURE

- HAVE CELL WALLS MADE OF CHITIN
- NO TRUE ROOTS,STEMS OR LEAVES
- NO CHLOROPHYLL
- UNICELLULAR/MULTICELLULAR



CHARACTERISTICS

- HETEROTROPHIC
  -PARASITIC
  -SAPHROTROPHIC

REPRODUCE

- BY MEANS OF SPORES
- SPORES PRODUCED IN SPORANGIA (BREAD MOULD)
- SPORES PRODUCED IN CLUB-SHAPE (MUSHROOMS)
- SPORES PRODUCED IN SACK (YEAST)

ANGIOSPERMS (FLOWERS)

-SEEDS ENCLOSED IN FRUIT

DICOTS (PETALS IN MULTIPLES OF 4 OR 5)

ROSE FAMILY – ROSES + BLACKBERRIES

PEA FAMILY – PEAS + BEANS

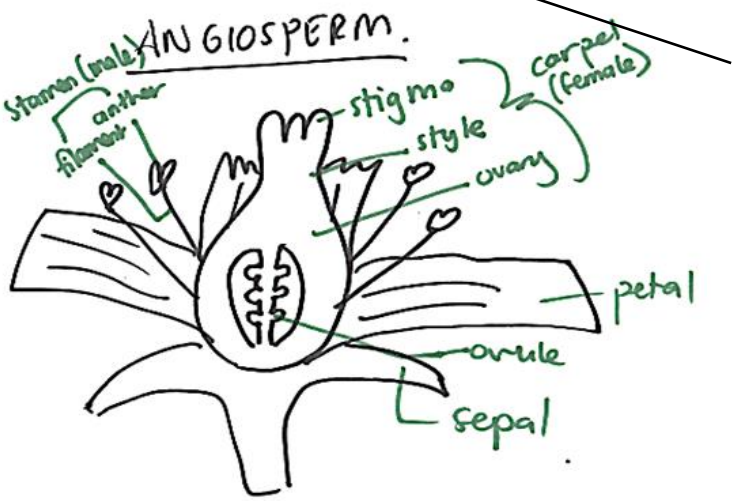
DAISY FAMILY – DAISIES + SUNFLOWERS

MONOCOTS (PETALS IN MULTIPLES OF 3)

LILY FAMILY – ONIONS + GARLIC

DAFFODIL FAMILY – SNOW DROP + DAFFODILS

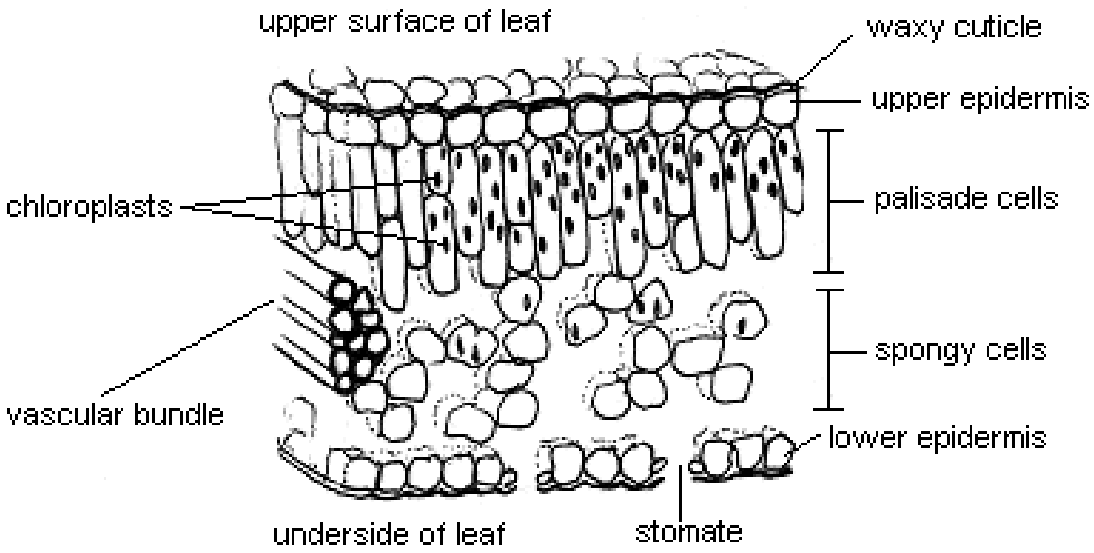
GRASS FAMILY – GRAINS + GRASSES



VASCULAR TISSUE
ROOTS, STEMS, LEAVES
REPRODUCE- seeds in fruit (NO WATER)
LIFESTYLE INDEPENDENT ON WATER
(EXCEPT HYDROPHYTES)

	BRYOPHYTES	PTERIDOPHYTES	GYMNOSPERMS	ANGIOSPERMS
VASCULAR TISSUE	NO	YES	YES	YES
TISSUE PRESENT	RHIZOID,THALLUS	FRONDS, RHIZOID	ROOTS,STEMS, LEAVES	ROOTS,STEMS, LEAVES
DOMINANT GENERATION	GAMETOPHYTE	SPOROPHYTE	SPOROPHYTE	SPOROPHYTE
TYPE OF REPRODUCTION	SPORES	SPORES	SEEDS IN CONES	SEEDS IN FRUIT
IS REPRODUCTION DEPENDANT ON WATER	YES	SEMI	NO	NO
IS LIFE STYLE DEPENDANT ON WATER	YES	NO	NO	NO , EXCEPT HYDROPHYTES

TRANSVERSE SECTION OF THE LEAF



PHASES OF PHOTOSYNTHESIS IN ESSAY FORM:
(MAKES IT EASY TO UNDERSTAND)

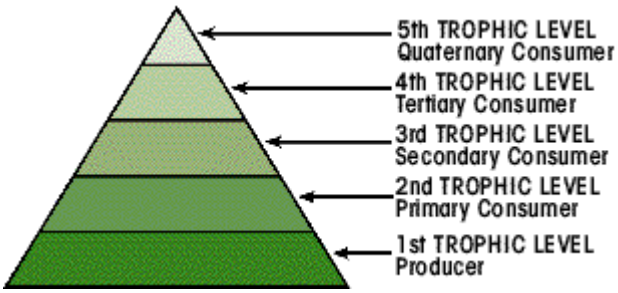
PHOTOSYNTHESIS CONSISTS OF TWO PHASES. THE LIGHT PHASE AND THE DARK PHASE, WHICH IS ALSO KNOWN AS THE CALVIN CYCLE. THE LIGHT PHASE OCCURS IN THE THYLAKOIDS OF THE CHLOROPLASTS AND THE DARK PHASE IN STROMA OF THE CHLOROPLAST. IN THE LIGHT PHASE, RADIANT ENERGY IS RELEASED FROM THE SUN – THIS ACTIVATES THE CHLOROPHYLL WHICH THEN TRAPS ENERGY. THIS ENERGY IS USED FOR 2 THINGS. FIRSTLY IT TAKES THE WATER AND SPLITS IT INTO HYDROGEN IONS AND INTO OXYGEN MOLECULES. THE OXYGEN IS RELEASED FROM THE STROMATA AS A BY-PRODUCT. THIS WHOLE PROCESS IS CALLED **PHOTOLYSIS ,** NADP (A HYDROGEN CARRIER) THEN CARRIES THE HYDROGEN OVER TO THE DARK PHASE IN THE FORM OF NADPH. THE ENERGY IS ALSO USED FOR **PHOTOPHOSPHORYLATION**. ADP HAS A PHOSPHATE ADDED AND BECOMES ATP (ENERGY CARRIER). THIS CARRIES THE ENERGY OVER TO THE DARK PHASE. IN THE DARK PHASE CO2 IS THEN COMBINED WITH THE HYDROGEN FROM PHOTOLYSIS AND THE ENERGY FROM PHOTOPHOSPHORYLATION AND FORMS GLUCOSE, WHICH IS STORED IN THE PLANT AS STARCH.

FACTORS AFFECTING THE RATE OF PHOTOSYNTHESIS

- 3 MAIN FACTORS ARE:
  -LIGHT
  -CO2
  -TEMPERATURE
- **LIGHT -** BRIGHTER LIGHT = INCREASE IN PHOTOSYNTHESIS UP UNTIL MAX. PHOTOSYNTHESIS RATE
- **CO2 –** MORE CO2 = INCREASE IN PHOTOSYNTHESIS.
  IF CO2 IS TOO HIGH " SLOWS DOWN DUE TO IT BEING TO ACIDIC
  - CO2 LEVELS USUALLY = ALL OVER. SOMETIMES ITS HIGHER CLOSER TO GROUND IN A DENSE FOREST THAN AN OPEN FIELD BECAUSE THE BACTERIA IN THE SOIL ALSO PRODUCES CO2.
- **TEMP –** UP TO A PT. + IN TEMP = + IN PHOTOSYNTHESIS
  - TEMP INCREASE BY $10^{o}C$ DOUBLES THE RATE
  - FLOURISH IN GREENHOUSE BECAUSE THERE'S A MAINTAINED WARMTH.
  - TEMP. ABOVE $40^{o}C$ SLOWS DOWN PHOTOSYNTHESIS AND EVENTUALLY
    THE HEAT DESTROYS ENZYMES RESPONSIBLE FOR CHEMICAL REACTIONS.

ANIMAL NUTRITION

- AUTOTROPHIC – MAKES OWN FOOD
- HETEROTROPHIC – CANNOT MAKE OWN FOOD



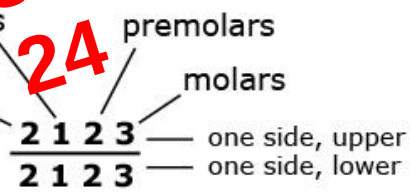
LIFE STYLES (CONSUMERS)

- PREDATORS (HUNT)
- SCAVENGER(EATS LEFT OVERS)
- DECOMPOSER(BREAKS DOWN FOOD OR MATERIAL)
- PARASITE(THE PARTY IS HARMED)

CLASSIFICATION OF LIFESTYLES

- SAPROPHYTIC – DECOMPOSERS (E.G BACTERIA, FUNGI)
- PARASITIC – PARASITES (INTERNAL OR EXTERNAL)
- HOLOZOIC – EVERYTHING ELSE

TEETH



HUMAN DIGESTIVE SYSTEM

DEFINITIONS*:

- PERISTALSIS – RHYTHMIC CONTRACTIONS OF THE ALIMENTARY CANAL THAT PUSHES FOOD FROM MOUTH TO ANUS
- DE-AMINATION – BREAKDOWN OF AMINO ACIDS IN LIVER BY REMOVAL OF AMINO GROUP
- DIGESTION – MECHANICAL AND CHEMICAL BREAKDOWN OF FOOD TO SOLUBLE PRODUCTS