

Introduction

Biology	study of life
Cell	Basic unit of life
	differentiates living and nonliving things

Characteristics of Life

characteristics that define living things

Organization emergent properties-components group together to form new f(x)

atoms>molecules>organelles>cells>tissues>organs>-organ system>organism>population>community>ecosystem>biosphere

Energy Utilization metabolism: absorbs energy + converts to bodily f(x)

energy transfer lost through heat

classified based on source of energy

1. Primary Producers (autotrophs) -obtain from non-living

2. consumers -from living

3. decomposers -from unliving

Homeostasis cells keep conditions within certain range

responds to stimuli to counteract changes

Reproduction goal of life: -keep genes alive

-transmit DNA

-pass traits to generations

2 ways

1. Asexual -1 parent. all offspring identical to parent

2. Sexual -2 parents. genetic diversity

Characteristics of Life (cont)

Growth Growth -increase in complexity of cells

Development

Development -inc in complexity of f(x) of cells

Species: specific pattern for growth and dev

Response to Environment Irritable: can respond to stimuli (senses as receptor)

stimulus--effector train: stimulus->receptor->coordinator->effector/response

Evolutionary Adaptation Adaptations: inherited characteristics to suit environment

Evolution: change in genetic makeup of population over generations

Charles Darwin & Alfred Russel Wallace (conceptualized)

Natural Selection: environmental pressure

Exposure to prolonged stimuli induces natural selection

Def of Life NASA -"self-sustaining organism with chemical systems that are capable of Darwinian Evolution"

life is too complex, diverse, and dynamic to be given an exact definition



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Bioethics

study of ethical, social, and legal issues that arise in the biomedical field

intends to 'guide', like a handbook

Autonomy determine wishes of the patient

ppl make choices based on own moral values and beliefs

Principle of self-rule and principle of respect for persons

informed consent: aware of every single option available to them

informed consent requirements

1. for patient capable of understanding consequences of consent

capable of making sound decision

2. for healthcare provider provide all necessary info for patient

perform reflective convo with patient

**Benefi-
cience** promote good

obligation to do something that will most likely do good unless there is sufficient reason not to

**Non-Ma-
leficience** not to inflict harm

obligation to not perform act that will most likely do harm

>fundamental duty of med service providers: give quality health care to all patients

Bioethics (cont)

>acknowledge that :

1. there are limits to ppl's abilities
2. treatment options may be too complex
3. always a chance for benefit or the risk of harm

Justice treat patients equally regardless of any other factors

medical need criteria:

1. likely benefit to patient
2. urgency of need to patient
3. change of quality of life to patient
4. duration of benefit to patient

conditions for determining priorities

1. on a national level
 - cost of med goods
 - fair and livable
 - economically stable

2. on an institutional level
 - model of medical triage

-to maximize number of survivors



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