THE UNIVERSITY OF MELBOURNE

Reptile Management and Health

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Lecture summary

Assessing and designing effective reptile husbandry requires an understanding of their physiological and behavioural needs and how environmental conditions impact on these. During this lecture we will discuss how and why we need to manage the following aspects of the captive environment.

- *Heat mosaic, preferred body temperatures and preferred optimal temperature zones*
- *Light : Visible and UVB*
- *Humidity*
- *Facilitating normal behaviours*

– *Enrichment*

– *Housing ratios*

– *Enclosure size and design*

Hygiene

- *Diet*

Providing comfort for reptiles

- Heat mosaic
- Light : Visible and UVB
- Humidity
- Hygiene
- Facilitating normal behaviours
  - Enrichment
  - Housing ratios
  - Enclosure size and design
- Diet

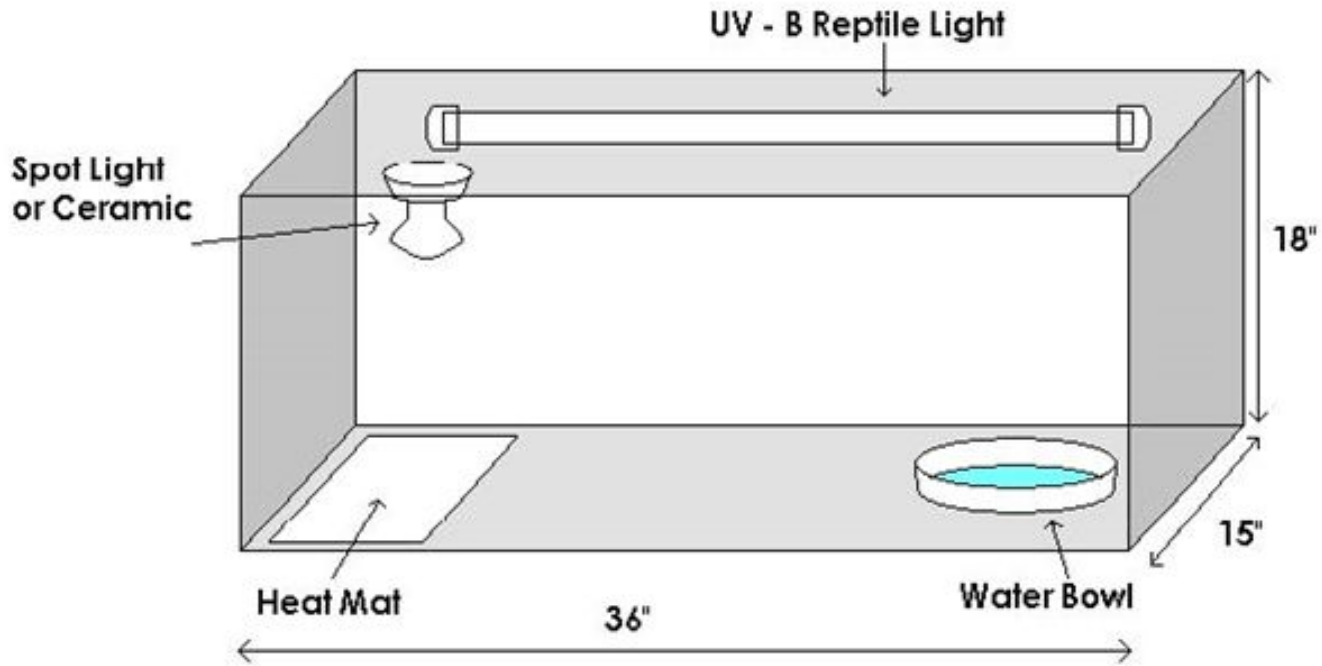
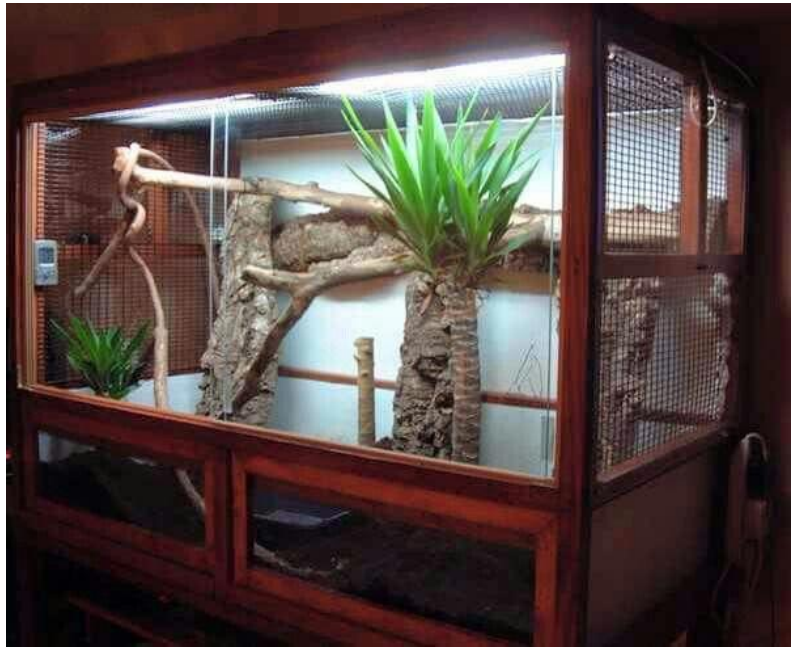
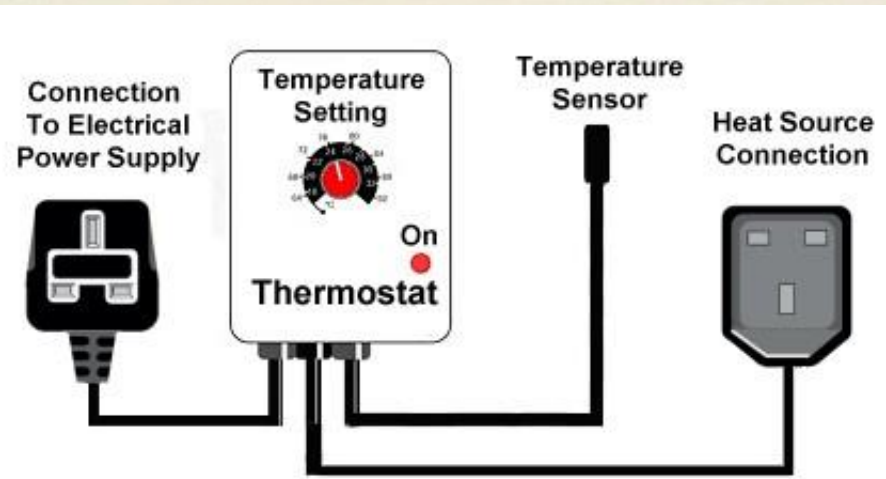


Diagram from website haapets



Heat requirements

- Reptiles are ectothermic
- PBT:Preferred Body Temperature varies for every body function
- POTZ:Preferred Optimal Temperature Zone varies between taxa/species
- Heat source preferences vary between taxa.


Connection
To Electrical
Power Supply
Temperature
Setting
On
Thermostat
Temperature
Sensor
Heat Source
Connection


Reptile One
MINI INFRARED
THERMOMETER
MEASURE

Providing and controlling heat

- Globes: coloured, infrared, ceramic
- Heat mats: geckos, low level back ground heat
- Water heaters: 1 amp per litre
- Thermostats and thermometers needed
- Globe wattage, tank insulation and ventilation affect temp mosaic
- Monitor behaviour as well as gauges
- Prevent burns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Black Moonlight
novelties


DAY LIGHT
LAMPS


CERAMIC
HEAT EMITTERS

Light requirements

- Visible light spectrum intensity and colour preferences vary between species.
- Daily cycle allows for rest.

Ultraviolet light

- UVA,B and C
- UVA debate
- UVB essential for chelonians, lizards other than geckos, crocodiles

Providing light

- Visible light provided by some heat globes and all UV globes.
- Colour type preferences for some taxa
- Light/dark cycle
  - Necessary for mental health and normal behaviour
  - 12/12 all year
  - seasonal variation


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Black Moonlight
novelties

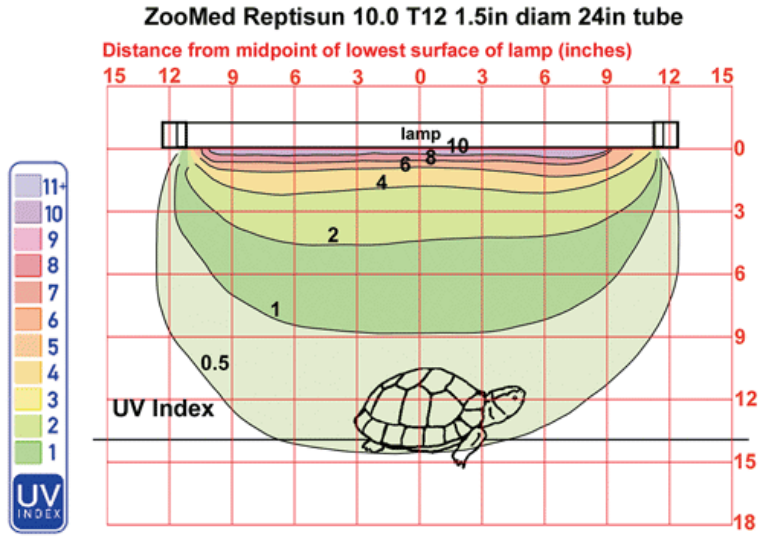

DAY LIGHT
LAMPS


CERAMIC
HEAT EMITTERS

Providing ultraviolet light

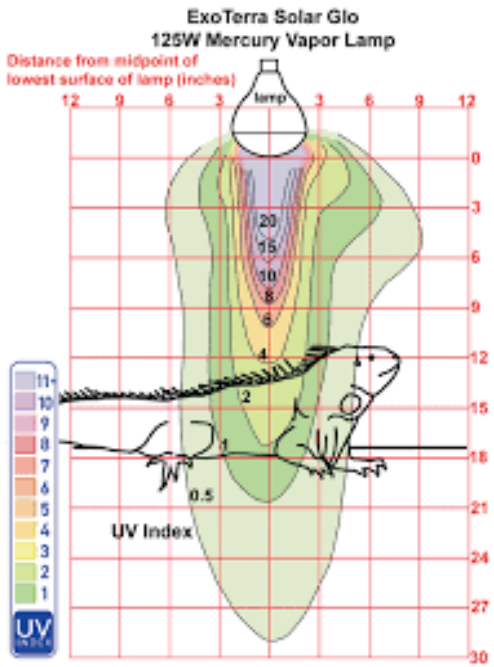
UVB wavelength 280-315nm

- 30cm or less from basking area
- Change globe every 6 months
- Full spectrum is visible UVA spectrum only
- Fluorescent, mercury vapour, compact UVB
- Blocked by glass and plastic


ZooMed Reptisun 10.0 T12 1.5in diam 24in tube
Distance from midpoint of lowest surface of lamp (inches)
15 12 9 6 3 0 3 6 9 12 15
lamp
10
8
6
4
2
1
0.5
UV Index
11+ 10 9 8 7 6 5 4 3 2 1
UV INDEX
0 3 6 9 12 15 18


5.0 UVB
REPTISUN
5.0 UVB

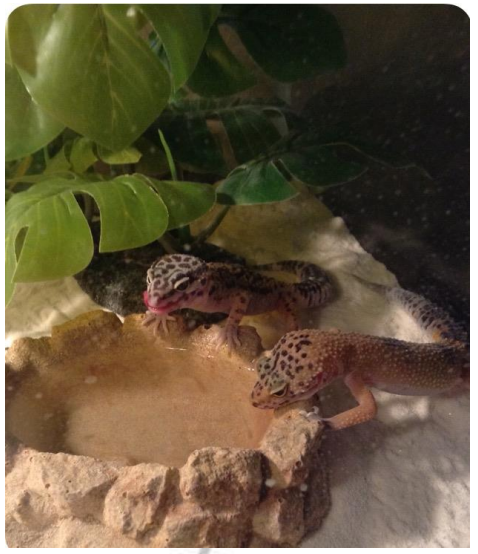

100W
REPTILE UV
MERCURY VAPOR LAMP


ExoTerra Solar Glo
125W Mercury Vapor Lamp
Distance from midpoint of lowest surface of lamp (inches)
12 9 6 3 lamp 3 6 9 12
20
15
10
8
6
4
2
1
0.5
UV Index
11+ 10 9 8 7 6 5 4 3 2 1
UV INDEX
0 3 6 9 12 15 18 21 24 27 30

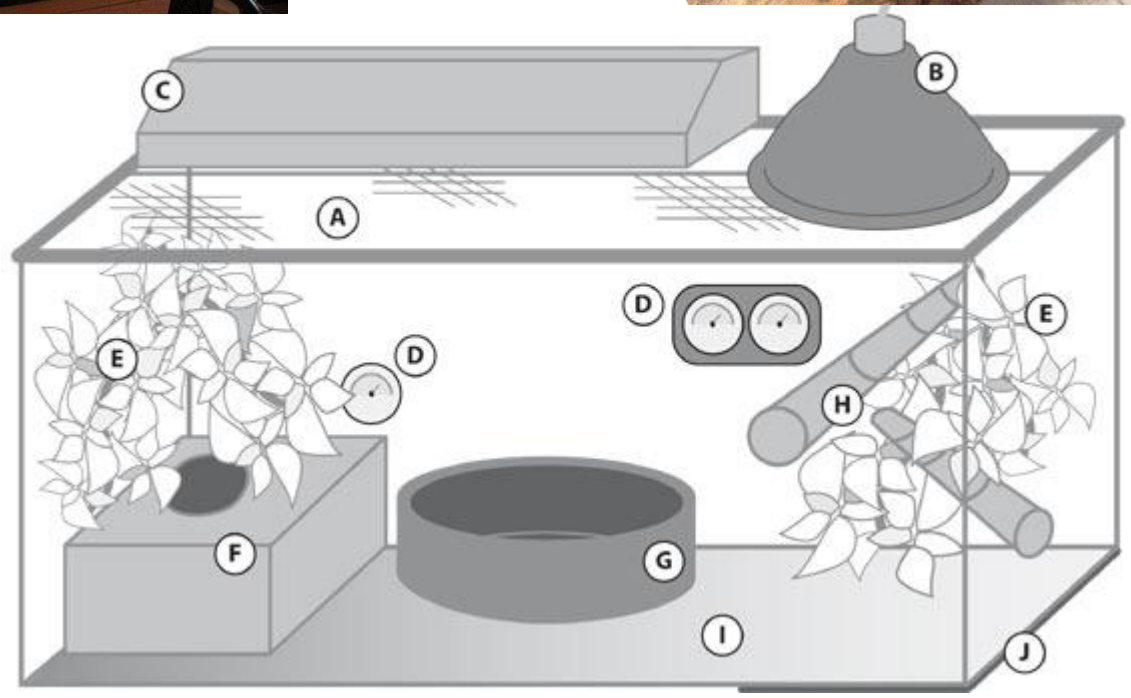

26W
Repti Glo 10.0

Humidity and water

- Humidity % varies between taxa
- Enclosure humidity affects hydration, hygiene, health of skin, lungs and gut and behaviour
- Some reptiles drink from containers, others from foliage or misting
- Too much access to water can be as unhealthy as too little for some taxa



A: Mesh lid
B: Heat lamp
C: UV B tube
D: Thermometer and hygrometer
E: artificial plants
F: Hide
G: Water bowl
H: Perche
I: Substrate
J: Heat mat



Providing water/controlling humidity

- Very wide taxa variations

Low humidity: Small water bowl at cool end, rare bathing and misting, dry substrates, excellent drainage.

High humidity: Large shallow water source near heat, foliage, frequent misting, bathing allowed

- Good ventilation essential for both

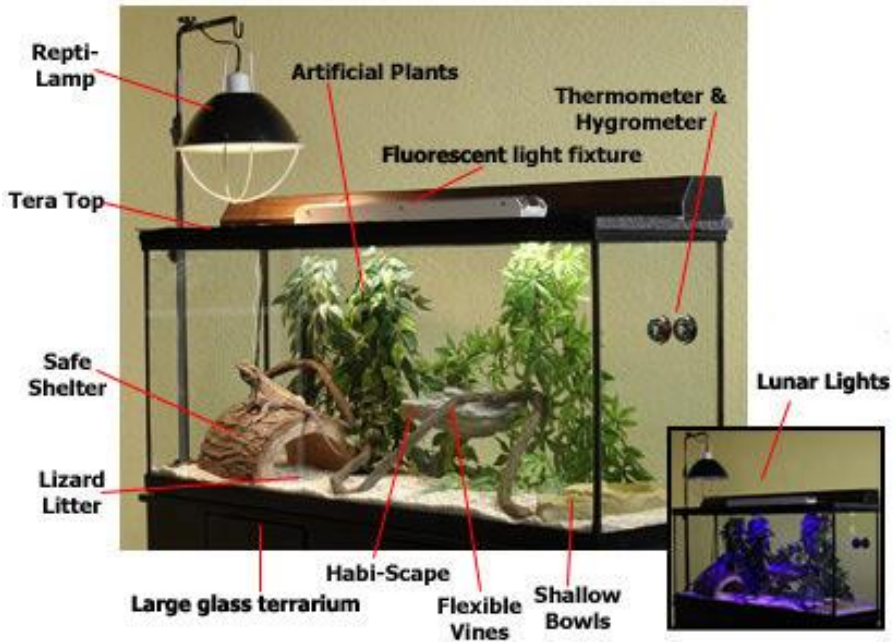
Space requirements

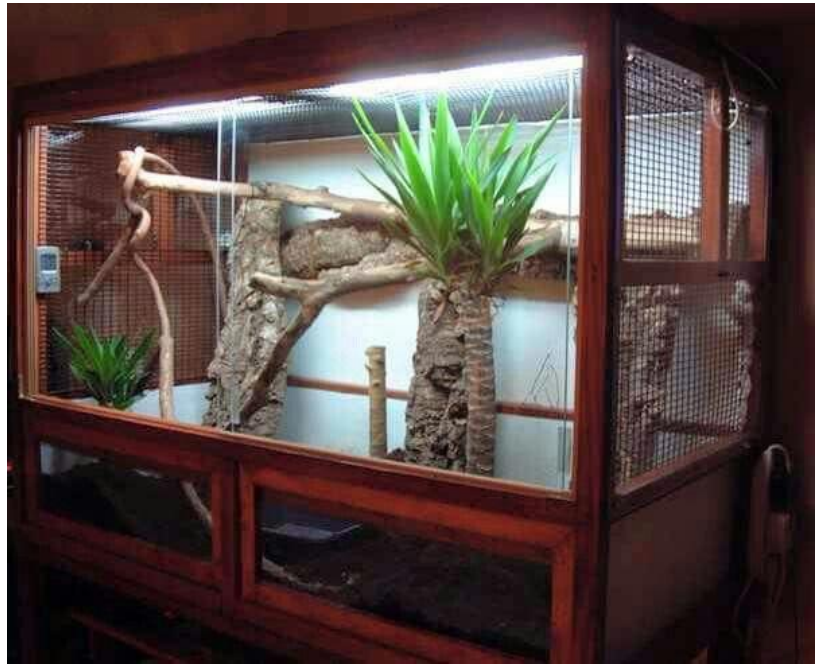
- Enough space to stretch out, climb or swim and to behave normally
- Enable retreat from companions
- Designed to provide an appropriate temperature mosaic
- Arboreal, terrestrial, aquatic
- Coinhabitants/sex ratios

Squamate (lizards and snakes) enclosure

Vivarium

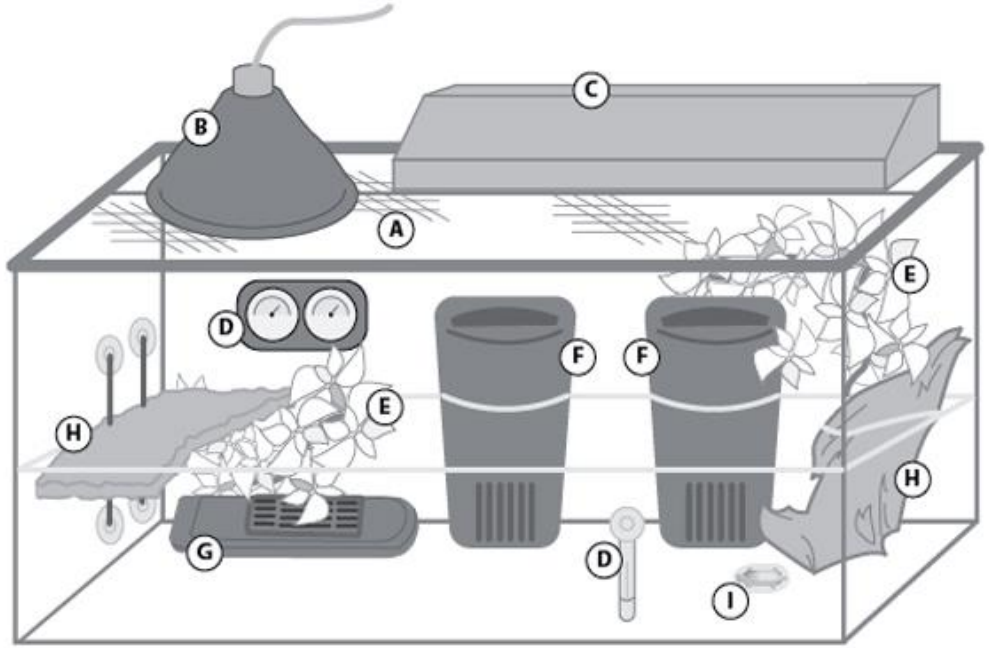
- Glass, wood, acrylic, mesh
- Consider insulating qualities of materials and absorbency.
- Size for snakes should allow them to stretch to full length across the diagonal
- Aboreal tanks tall, terrestrial long
- Greater heat mosaic range in longer tanks


Repti-
Lamp
Artificial Plants
Thermometer &
Hygrometer
Fluorescent light fixture
Tera Top
Safe
Shelter
Lunar Lights
Lizard
Litter
Habi-Scape
Large glass terrarium
Flexible
Vines
Shallow
Bowls



Aquatic tanks/pools

- Chelonians, crocodiles, water monitors, some dragons
- Basking or land area appropriate for species, UVB and heat above it
- Water heater (1amp per litre for effective heating) and thermostat
- Filtration: external cannisters most effective
- Water quality monitoring



A: Mesh lid
B: Heat lamp
C: UV B tube
D: Thermometers/heating rod
E: artificial plants
F: Filters
G: Aerator
H: Hide/dock
I: Substrate

Substrates and furnishings

Substrates

- Consider hygiene, thermal properties, absorbancy, abrasiveness
- Turf, newspaper, commercial litters, stones, slate tiles, bark, sand, tubs of litter

Furnishings

- Logs, rocks, tiles, plants, artificial works
- Hides, burrows, screening


www.oneillscrossing.com

Facilitating normal behaviours

- Nocturnal, crepuscular or diurnal?
- Housing ratios
- Hides and camouflage
- Burrowing and digging
- Climbing
- Thermoregulating and basking
- Bathing
- Ecdysis


REPTISAND
Natural Red

Handling and socialising

- Handling reptiles usually takes them out of their POTZ
- “Socialising” with mammalian carnivores is usually stressful
- Being under constant surveillance by us or other pets is very stressful
- Vibrations through their tanks also cause stress

Enrichment

- Change tank furnishings and plants
- Don’t overcrowd tank furnishings as it can make basking and movement difficult
- Spartan tanks are easy to clean but provide poor enrichment
- Vary substrates provided
- Beware mite contamination if using natural furnishings or recycling from other tanks.

Diet

- Snakes: whole prey, never live prey
- Chelonians: Tortoises are terrestrial and herbivores. Turtles are aquatic. Fresh water turtles eat invertebrates with varying proportions of plants.
- Lizards: Very wide range of dietary niches
- Crocodiles: Carnivores

Whole prey diets

- It is illegal to feed live vertebrate prey
  - Rodents, rabbits, poultry
  - Snakes and large carnivorous lizards
- Live invertebrates and fish may be fed
- The quality of the diet is only as good as the quality of the raising of the prey items

Invertebrate and veg diet

- Crickets, woodies, mealworms, snails, earthworms, slaters, millipedes, moths, flies (wild caught and cultured)
- Variety of invertebrates is best
- Chopped leafy greens
- Pieces of hard vegetables like carrot and sweet potato are good for teeth

Supplements

- Calcium carbonate (every invertebrate feed)
- Vitamin D3
- Multivitamins (once weekly)
- Method of delivery affects intake
  - Dust just before feeding out
  - Dusting no use for aquatic feeders
  - Feed out small numbers of inverts
  - Gut loading ensures delivery but kills inverts faster

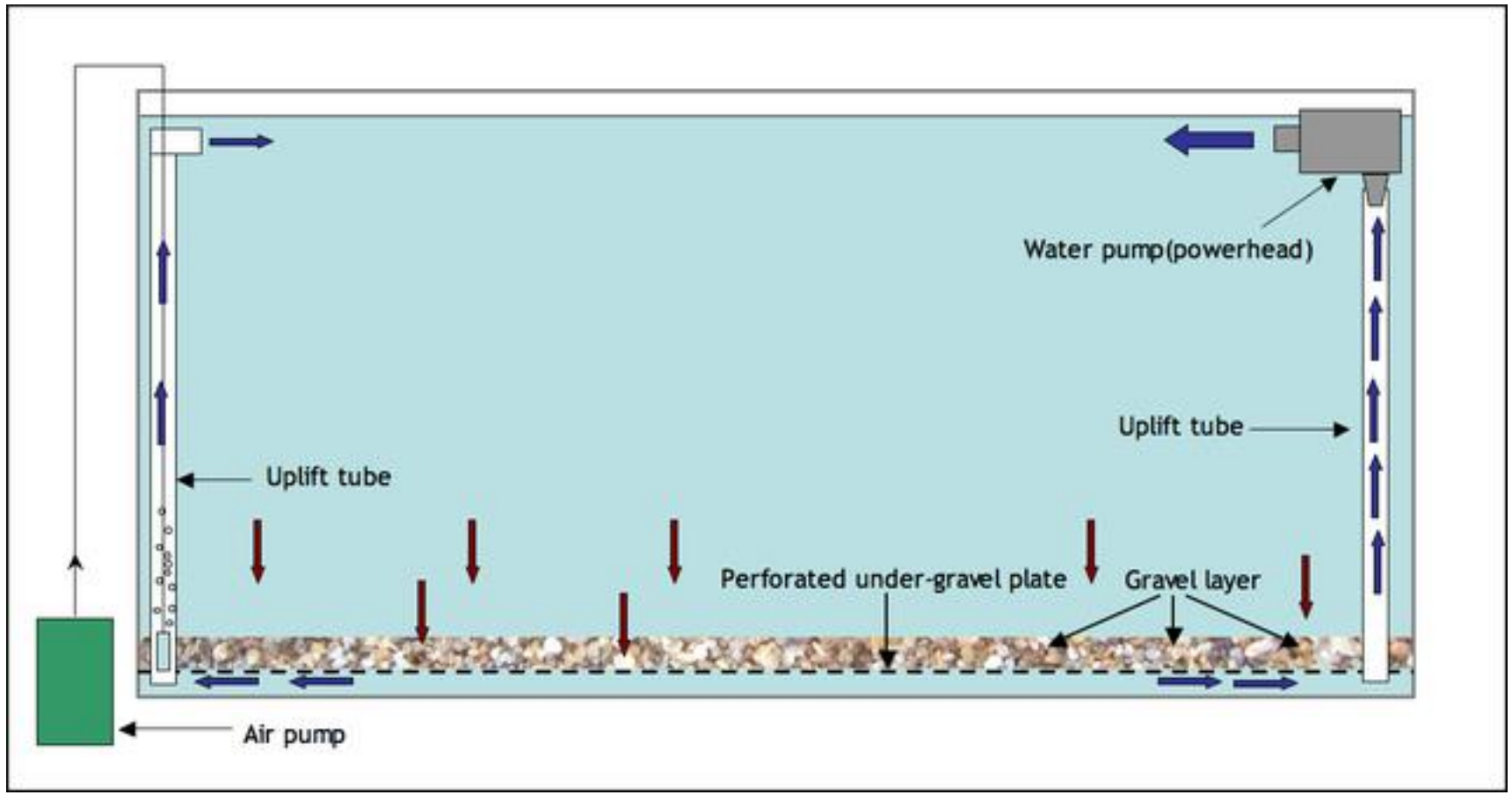
Hygiene

Aquatic

- Water quality monitoring
  - Nitrogen cycle, water hardness, pH
- Filtration–in tank versus external, under gravel
- Partial water changes

Vivarium

- Daily spot cleaning,3-6 monthly scrub F10
- Mite prevention and treatment


Water pump(powerhead)
Uplift tube
Uplift tube
Perforated under-gravel plate
Gravel layer
Air pump

Tank set up considerations

- Ectotherms with individual POTZs
  - Heat source management, basking opportunities, insultation, ventilation
- Light (Visible and UVB)
  - UVB globe type, position, age of globe
  - Day length
- Humidity
  - water source, misting, furnishings, ventilation

Enrichment and disease prevention

- Hygiene
  - Humidity, cleaning, substrate management
  - Mite prevention
- Handling
  - Time out of tank, comfort with being handled
- Appropriate diet and delivery of food items
- Housing ratios
- Monitor equipment and behaviour