

A Review of Common Stains.....

What are you looking for/at?	Commonly used stain	Examples of what you see:
Bacteria	Gram's	Violet - positive Red - negative
General plant tissue	Quadruple stain Safranin O Fast Green Crystal Violet Orange G	Red nuclei, chromosomes, lignified cell walls Green cellulose cell walls Purple starch grains Yellow acidophilic cytoplasm
General animal tissue	H&E (Hematoxylin & Eosin)	Blue nuclei (H) Pink cytoplasm and connective tissue (E)
Dramatic cell and tissue features	Mallory triple	Blue cartilage and collagen Red nucleus Orange cytoplasmic elements
Dramatic cell and tissue features	Masson	Green collagen and mucus Red nucleus Brown-Black chromatin
Standard Blood smears	Giemsa or Wright's	Orange/Red erythrocytes Blue/Purple lymphocytes Multi-color granulocytes
Mitotic figures	Iron Hematoxylin	Blue/Black chromosomes, cytoskeleton (tubulin), and mitochondria
Fats and lipids	Osmium tetroxide or Sudan Black	Black lipid droplets, cell membranes, myelin
Mucus/complex polysaccharides	PAS (Periodic Acid/Schiff)	Fuschia/Red secretory granules in goblet cells
Neurofibrils	Silver (multiple methods)	Black neuronal cytoskeleton
Elastic connective tissue	Orcein or Verhoeff	Brown/Black elastin containing fibers