Table 1. Top 10 traits emerging as most strongly associated with each color, separated by decade

| Colors | Words | 1800 | 1810 | 1820 | 1830 | 1840 | 1850 | 1860 |
|---|---|---|---|---|---|---|---|---|
| White | Traits | Stout,<br>Wooden,<br>Naked,<br>Stable,<br>Handsome,<br>Chastity,<br>Clean,<br>Horned,<br>Neat,<br>Raw | Neat,<br>Clean,<br>Powdered,<br>Stout,<br>Gentile,<br>Coarse,<br>Robust,<br>Handsome,<br>Horned,<br>Simple | Rape,<br>Handsome,<br>Clean,<br>Neat,<br>Naked,<br>Wooden,<br>Plain,<br>Upright,<br>Simple,<br>Workmanship | Kill,<br>Pure,<br>Clean,<br>Enslave,<br>Neat,<br>Spotless,<br>Chaste,<br>Transparent,<br>Thin,<br>Tame | Elderly,<br>Armed,<br>Prevent,<br>Pure,<br>Earthy,<br>Intelligent,<br>Rally,<br>Drive,<br>Bath,<br>Clean | Clean,<br>Spotless,<br>Genteel,<br>Athletic,<br>Sleek,<br>Respectable,<br>Wash,<br>Rude,<br>Bargaining,<br>Elderly | Equality,<br>Clean,<br>Equal,<br>Amber,<br>Bald,<br>Spotless,<br>Elderly,<br>Bearded,<br>Pure,<br>Perfect |
| | Entities | Milk,<br>Marble,<br>Sheep,<br>Teeth,<br>Sheep,<br>Wool,<br>Tablet,<br>Lamb,<br>Skeleton,<br>Mule | Marble,<br>Milk,<br>Shirt,<br>Tablet,<br>Beard,<br>Ivory,<br>Turban,<br>Crust,<br>Plume,<br>Pudding | Marble,<br>Tablet,<br>Crucifix,<br>Shirt,<br>Napkin,<br>Couple,<br>Kids,<br>Snow,<br>Sugar,<br>Milk | Negro,<br>Marble,<br>Snow,<br>Milk,<br>Hair,<br>Sculptor,<br>Charger,<br>Smoke,<br>Flag,<br>Corpse | Marble,<br>Female,<br>Male,<br>Milk,<br>Sportsman,<br>Adult,<br>Egg,<br>Chariot,<br>Snow,<br>Sack, | Marble,<br>Man,<br>Milk,<br>Tower,<br>Charger,<br>Race,<br>Egg,<br>Moustache,<br>Beard,<br>Staff | Female,<br>Egg,<br>Citizenship,<br>Negro,<br>Male,<br>Marble,<br>Dove,<br>Teeth,<br>Slave,<br>Race |
| Black | Traits | Custody,<br>Flat,<br>Usher,<br>Shocking,<br>Stupid,<br>Confinement,<br>Big,<br>Cruel, | Usher,<br>Trap,<br>Vast,<br>Horned,<br>Elderly,<br>Complicated,<br>Prodigious,<br>Custody, | Custody,<br>Bony,<br>Frightful,<br>Dumb,<br>Usher,<br>Elderly,<br>Horrid,<br>Thrust, | Grim,<br>Bushy,<br>Fierce,<br>Ominous,<br>Infamous,<br>Usher,<br>Ugly,<br>Bully, | Usher,<br>Cook,<br>Technical,<br>Ugly,<br>Horned,<br>Worried,<br>Sunken,<br>Grim, | Huge,<br>Scourge,<br>Flat,<br>Usher,<br>Rusty,<br>Custody,<br>Horned,<br>Uncouth, | Usher,<br>Tragedy,<br>Horned,<br>Piracy,<br>Stupidity,<br>Shipwreck,<br>Custody,<br>Burglary, |

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| | | Harmless,<br>Running | Coarse<br>Hideous | Monstrous,<br>Bored | Murderous,<br>Clumsy | Lash,<br>Big | Sleek,<br>Imprison | Extermination,<br>Unhappy |
| | Entities | Sheep,<br>Jaws,<br>Flux,<br>Jail,<br>Block,<br>Negro,<br>Corpse,<br>Boy,<br>Slave,<br>Teeth | Tablet,<br>Breed,<br>Coal,<br>Limestone,<br>Beak,<br>Hawk,<br>Hair,<br>Sea,<br>Skull,<br>Pack | Livery,<br>Jet,<br>Dog,<br>Culprit,<br>Hair,<br>Charger,<br>Base,<br>Hog,<br>Snout,<br>Hinge | Dealer,<br>Mail,<br>Warden,<br>Robber,<br>Pig,<br>Nun,<br>Grate,<br>Monk,<br>Den,<br>Priest | Rust,<br>Gull,<br>Coachman,<br>Negro,<br>Slave,<br>Beak,<br>Hole,<br>Vermin,<br>Hawk,<br>African | Gull,<br>Urchin,<br>Negro,<br>Beak,<br>Goat,<br>Hair,<br>Thunder,<br>Beard,<br>Race,<br>Shawl | Gull,<br>Negro,<br>Pack,<br>Squaw,<br>Contraband,<br>African,<br>Servant,<br>Slave,<br>Donkey,<br>Hole |
| Red | Traits | Heat,<br>Hot,<br>Swimming,<br>Wrath,<br>Heating,<br>Shot,<br>Electric,<br>Anger,<br>Fiery,<br>Friction | Heating,<br>Hot,<br>Heat,<br>Intense,<br>Navigation,<br>Bathing,<br>Hardened,<br>Electric,<br>Shot,<br>Magnetic | Hot,<br>Heat,<br>Heating,<br>Wrath,<br>Shot,<br>Electric,<br>Bored,<br>Fiery,<br>Anger,<br>Intense | Danger,<br>Hot,<br>Eastern,<br>Hardened,<br>Western,<br>Heat,<br>Bored,<br>Inflated,<br>Heating,<br>Upper | Hot,<br>Heat,<br>Molten,<br>Slaughter,<br>Eastern,<br>Fiery,<br>Current,<br>Navigation,<br>Heating,<br>Hardened | Hot,<br>Heat,<br>Shot,<br>Upper,<br>Electric,<br>Current,<br>Bored,<br>Cross,<br>Heating,<br>Fiery | Heat,<br>Hot,<br>Scratch,<br>Decomposition<br>,<br>Heating,<br>Hemorrhage,<br>Fiery,<br>Boil,<br>Friction,<br>Electrical |
| | Entities | Sea,<br>Furnace,<br>Blood,<br>Net,<br>Vessel,<br>Fury,<br>Iron,<br>Ocean, | Porcelain,<br>Sea,<br>Furnace,<br>Blood,<br>Whale,<br>Fleet,<br>Charcoal,<br>Iron, | Sea,<br>Brick,<br>Exposure,<br>Porcelain,<br>Furnace,<br>Blood,<br>Vessel,<br>Electricity, | Lion,<br>Blood,<br>Iron,<br>Rod,<br>Coal,<br>Sea,<br>Pharaoh,<br>Mouth, | Lion,<br>Sea,<br>Pharaoh,<br>Blood,<br>Conglomerate,<br>Charcoal,<br>Ordeal,<br>Limestone, | Poker,<br>Gash,<br>Fire,<br>Iron,<br>Furnace,<br>Charcoal,<br>Brick,<br>Coal, | Barium,<br>Disc,<br>Porcelain,<br>Iron,<br>Brick,<br>Furnace,<br>Pharaoh,<br>Fire, |

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|---|---|---|---|---|---|---|---|---|
| | | Whale,<br>Pharaoh | Admiral,<br>Brick | Oxygen,<br>Charcoal | Flux,<br>Crank | Oxide,<br>Iron | Lava,<br>Sea | Blood,<br>Stove |
| Green | Traits | Shady,<br>Recreation,<br>Flowery,<br>Pleasant,<br>Blossom,<br>Dining,<br>Prospect,<br>Fragrance,<br>Busy,<br>Mediate | Shady,<br>Flowery,<br>Vacation,<br>Fruitful,<br>Gay,<br>Pleasant,<br>Fertile,<br>Placid,<br>Wake,<br>Fragrance | Shady,<br>Snug,<br>Pastime,<br>Fruitful,<br>Comfortable,<br>Lie,<br>Flowery,<br>Thriving,<br>Sunny,<br>Bane | Shady,<br>Refreshing,<br>Grassy,<br>Thriving,<br>Delightful,<br>Flowery,<br>Sunny,<br>Lone,<br>Blooming,<br>Retirement | Enchantment,<br>Shady,<br>Pleasant,<br>Fruitful,<br>Flowery,<br>Moist,<br>Fresh,<br>Delightful,<br>Sheltered,<br>Fertile | Delightful,<br>pleasant,<br>Shady,<br>Flourish,<br>Sprout,<br>Fresh,<br>Flowery,<br>Abundance,<br>Refreshing,<br>Grassy | Grassy,<br>Shady,<br>Flowery,<br>Sprout,<br>Fruitful,<br>Fresh,<br>Irrigation,<br>Refresh,<br>Leafy,<br>Delightful |
| | Entities | Orchard,<br>pasture,<br>Garden,<br>Grove,<br>Herbs,<br>Bush,<br>Meadow,<br>Vineyard,<br>Grass,<br>Lawn | Meadow,<br>Terrace,<br>Desk,<br>Pasture,<br>Vale,<br>Grass,<br>Tree,<br>Lawn,<br>Shade,<br>Room | Woodland,<br>Vale,<br>Orchard,<br>Pasture,<br>Herbs,<br>Garden,<br>Parish,<br>Outskirts,<br>Stall,<br>Turf | Turf,<br>Woodland,<br>Grass,<br>Meadow,<br>Knoll,<br>Herb,<br>Lawn,<br>Log,<br>Stall,<br>Recess | Meadow,<br>Grass,<br>Garden,<br>Grove,<br>Turf,<br>Herb,<br>Knoll,<br>Pasture,<br>Herbs,<br>Spring | Conservatory,<br>Meadow,<br>Grass,<br>Herb,<br>Spring,<br>Leaf,<br>Holly,<br>Clover,<br>Hay,<br>Twig | Garden,<br>Herb,<br>Orchard,<br>Grass,<br>Meadow,<br>Spring,<br>Turf,<br>University,<br>Knoll,<br>Pasture |
| Blue | Traits | Noble,<br>Vivid,<br>Serenity,<br>Center,<br>Uniform,<br>Bless,<br>Majestic,<br>Sparkling,<br>Contrast, | Noble,<br>Celestial,<br>Expressive,<br>Dazzling,<br>Charming,<br>Bless,<br>Delight,<br>Distant,<br>Pause, | Misty,<br>Calm,<br>Blissful,<br>Moist,<br>Shadowy,<br>Clear,<br>Solar,<br>Lucid,<br>Cloudy, | Sparkling,<br>Bland,<br>Frosty,<br>Serenity,<br>Calm,<br>Serene,<br>Mild,<br>Snowy,<br>Intense, | Bright,<br>Angelic,<br>Snowy,<br>Dim,<br>Calm,<br>Hazy,<br>Cloudy,<br>Vanishing,<br>Sparkling, | Convertible,<br>Snowy,<br>Visible,<br>Distant,<br>Clear,<br>Molten,<br>Bright,<br>Calm,<br>Dim, | Explosion,<br>Serene,<br>Serenity,<br>Clear,<br>Pure,<br>Sublime,<br>Dazzle,<br>Calm,<br>Bright, |

| | | Attractive | Sparkling | Flaming | Steady | Rapture | Sweep | Wondrous |
|---|---|---|---|---|---|---|---|---|
| | Entities | Ribbon, Lord, Admiral, Flame, Firmament, Baron, Sky, Rainbow, Orb, Admiralty | Ribbon, Admiral, Lord, Sky, Firmament, Lady, Jacket, Hood, Torch, Clouds | Sky, Mist, Firmament, Heaven, Distance, Kindling, Overcast, Orb, Bubble, Perspective | Sky, Firmament, Gap, Kindling, Glow, Admiral, Glare, Heaven, Clouds, Blaze | Commodity, Sky, Firmament, Heaven, Sunshine, Orb, Gleam, Shroud, Ocean, Gap | Sky, Heaven, Firmament, Speck, Ocean, Landscape, Admiral, Haze, Sea, Mist | Sky, Heaven, Ocean, Sunshine, Firmament, Gem, Gap, Admiral, Bubble, Crystal |
| Yellow | Traits | Contagious, Inflammation, Intensity, Insanity, Infection, Delirium, Contagion, Radical, Frequency, Acute | Contagious, Nauseous, Putrid, Inflammation, Delirium, Decrease, Acute, Development, Tension, Electrical | Contagious, Inflammation, Modification, Infectious, Nervous, Nausea, Putrid, Mortality, Vomit, Nauseous | Contagious, Inflammatory, Inflammation, Sickly, Putrid, Delirious, Attack, Malignant, Vomit, Acute | Fright, Contagious, Acute, Mania, Delirious, Delirium, Putrid, Eruption, Reaction, Inflammation | Dusky, Venereal, Hysteria, Inflammation, Contagious, Infectious, Acute, Malignant, Delirium, Atrophy | Sad, Infectious, Eruption, Atrophy, Acute, Malignant, Contagious, Outbreak, Inflammation, Contagion |
| | Entities | Fever, Disease, Plague, Pox, Malady, Complication, Duration, Drought, Sting, Flux | Fever, Disease, Plague, Pox, Scurvy, Malady, Insect, Complication, Temperament, Drought | Fever, Disease, Malady, Epidemic, Pox, Measles, Plague, Scurvy, Metal, Idea, | Fever, Disease, Cholera, Epidemic, Plague, Measles, Pox, Malady, Scurvy, Headache, | Fever, Epidemic, Cholera, Disease, Scurvy, Measles, Smallpox, Pox, Plague, Urine | Fever, Cholera, Pox, Smallpox, Disease, Epidemic, Measles, Typhoid, Malady, Influenza | Fever, Cholera, Pox, Plague, Epidemic, Typhoid, Measles, Pestilence, Disease, Smallpox |

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| Orange | Traits | Electoral, Consenting, Reigning, Hereditary, Guarantee, Invasion, Alliance, Oppose, Intimidate, Negotiate | Assurance, Electoral, Succeed, Hereditary, Compelling, Nobility, Declaration, Concur, Alliance, Consenting | Preference, Electoral, Hereditary, Declare, Notify, Consolidate, Sovereign, Reigning, Election, Negotiate | Courage, Electoral, Invasion, Hereditary, Oppose, Withdraw, Deliverance, Reigning, Abandon, Alliance | Achieve, Declare, Hereditary, Reigning, Inform, Frustrated, Invasion, Elective, Declaration, Peel | Amnesty, Pacify, Declaration, Allegiance, Concur, Conference, Legitimacy, Frustrated, Rescind, Confidence | Peel, Confide, Frustrated, Cooperate, Sovereignty, Assist, Advice, Intriguing, Concur, Determination |
| | Entities | Prince, Princess, Highness, Archduke, Duke, Concert, Consort, Marquis, Monarch, Duchess | Prince, Princess, Highness, Duke, Archduke, Consort, King, Concert, Emperor, Minister | Prince, Princess, Duke, Archduke, Highness, King, Successor, Consort, Duchess, Pretender | Prince, Princess, Duke, King, Highness, Emperor, Pretender, House, Bulletin, Throne | Prince, Princess, Duke, King, Archduke, Highness, Marquis, Concert, Protestant, Brother | Prince, Princess, Archduke, Duke, Duchess, Marquis, Highness, Concert, Carte, Successor | Prince, Duke, Princess, Liege, Marquis, Monarch, Enterprise, Archduke, Earl, Carte |
| Purple | Traits | Imperial, Royalty, Regal, Tardy, Aspire, Dignified, Awed, Renown, Accept, Flattered | Trusty, Pomp, Splendor, Orthodox, Imperial, Grandeur, Dignity, Bestow, Regal, Tardy | Imperial, Vacant, Pomp, Regal, Reward, Dignity, Dominion, Bestow, Reserved, Reigning | Imperial, Dignity, Pomp, creative adore tragic regal pageant sacred prostrate | Regal, Imperial, Pomp, Dignity, Vacant, Bestow, Penance, Prerogative, Royalty, Renown | Oppressed, Imperial, Regal, Pomp, Dignity, Unlimited, Royalty, Greatness, Luxury, Costly | Regal, Pomp, Imperial, Homage, Tribute, Moan, Gaudy, Silken, Grandeur, Pageant |

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|---|---|---|---|---|---|---|---|---|
| | Entities | Colleague, Competitor, Barbarian, Dictator, Candidate, Senator, Banquet, Successor, Monarch, Mandate | Predecessor, Senator, Senate, Roman, Prostitution, Pope, Dictator, Stipend, Robe, Emperor | Colleague, Emperor, Empire, Insignia, Clergy, Benefactor, Concubine, Candidate, Competitor, Monarch | Robe, Insignia, Self, Incense, Linen, Wreath, Blaze, Virgin, Pope, Velvet | Successor, Insignia, Priesthood, Throne, Monarch, Pope, Knighthood, Competitor, Vacancy, Conqueror, | Insignia, Robe, Tiara, Empire, Roman, Dictator, Emperor, Priesthood, Muse, Primate | Vassal, Crown, Muse, Dictator, Conqueror, Insignia, Monarch, Dictatorship, Primate, Spoils |
| Brown | Traits | Major, Miscellaneous, Trifle, Detailed, Dull, Obedient, Accurate, Shortness, Restricted, Ingenious | Major, Mate, Certify, Honest, Suspect, Console, Obscure, Cautious, Consoled, Bankrupt | Variable, Acute, Shortness, Accurate, Dull, Major, Depth, Stupidity, Depressed, Beholden | Major, Ingenious, Experience, Rely, Intelligent, Prefer, Stale, Mess, Blunt, Theoretical | Major, Stale, Cook, Fry, Fried, Moody, Pathological, Miscellaneous, Bankrupt, Dusky | Major, Philosophical, Autobiographical, Senior, Funny, Lengthy, Unwell, Moody, Slick, Sermon | Senior, Major, Evident, Cook, Moody, Operative, Miscellaneous, Master, Autobiographical, Fry |
| | Entities | Sir, Dictionary, Doctor, Friend, Hooker, Loaf, Reverend, Bacon, Hood, Schoolmate | Hooker, Sergeant, Sir, Bacon, Valet, Colleague, Rascal, Barrister, Schoolmaster, Assistant | Ale, Mallet, Carte, Bacon, Roe, Hooker, Scholar, Reverend, Crust, Loaf | Dictionary, Bacon, Hooker, Professor, Loaf, University, Assistant, Cheese, Attorney, Trader | Professor, Bread, Clerk, University, Hooker, Translator, Brigade, Crust, Barrister, Attorney | Hay, Sir, University, Barrister, Almanac, Roach, Assistant, Hooker, Novelist, Obituary | Sir, Professor, Attorney, Doctor, Assistant, Commentator, Hooker, University, College, President |

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|---|---|---|---|---|---|---|---|---|
| Pink | Traits | (1820) Courtesy, Politeness, Decorum, Courteous, Breeding, Compliment, Propriety, Relaxing, Civility, Beauty | (1820) Courtesy, Politeness, Decorum, Courteous, Breeding, Compliment, Propriety, Relaxing, Civility, Beauty | (1820) Courtesy, Politeness, Decorum, Courteous, Breeding, Compliment, Propriety, Relaxing, Civility, Beauty | Instruction, Politeness, Courtesy, Courtship, Decorum, Cleanliness, Ladyship, Decency, Utmost, Simplicity | Delicate, Delicacy, Politeness, Modify, Relaxing, Varying, Expressive, Honesty, Courtesy, Candor | Honesty, politeness, delicacy, cleverness, sobriety, modesty, elegance, propriety, fairness, courtesy | Propriety, Courtesy, Shy, Politeness, Ladyship, Boyish, Delicacy, Decorum, Imaginable, Lover |
| | Entities | (1820) Costume, Etiquette, Dress, Attire, Intruder, Countess, Gloss, Apparel, Hostess, Manner | (1820) Costume, Etiquette, Dress, Attire, Intruder, Countess, Gloss, Apparel, Hostess, Manner | (1820) Costume, Etiquette, Dress, Attire, Intruder, Countess, Gloss, Apparel, Hostess, Manne | Etiquette, Satin, Tenure, Gloss, Rite, Dress, Costume, Complication, Distinction, Skill | Duration, Attire, Texture, Prostitute, Mahogany, Mane, Taste, Gender, Blend, Toilet, | Etiquette, Shawl, Dress, Skill, Self, Attire, Dessert, Animation, Damsel, Tape | Etiquette, Damsel, Dame, Intruder, Jail, Bedroom, Gunnery, Girl, Baroness, Schoolboy |

| Colors | Words | 1870 | 1880 | 1890 | 1900 | 1910 | 1920 | 1930 |
|---|---|---|---|---|---|---|---|---|
| White | Traits | Clean, | Clean, | Equality, | Equality, | Civilian, | Respectable, | Elderly, |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Fleshy,<br>Rest,<br>Mass,<br>Wash,<br>Outer,<br>Smooth,<br>Holy,<br>Naked,<br>Pure | Equality,<br>Snowy,<br>Mass,<br>Liberate,<br>Emancipation,<br>Bearded,<br>Elderly,<br>Civilized,<br>Silky | Protect,<br>Intact,<br>Spotless,<br>Ballot,<br>Pure,<br>Armed,<br>Blameless,<br>Hinder,<br>Chastity | Inferior,<br>Equal,<br>Kill,<br>Bony,<br>Honorary,<br>Clean,<br>Slaughter,<br>Killing,<br>Large | Superiority,<br>Rest,<br>Equality,<br>Savage,<br>Respectable,<br>Nude,<br>Prohibition,<br>Supremacy,<br>Native, | Equality,<br>Ballot,<br>Armed,<br>Wooden,<br>Goodwill,<br>Burden,<br>Standstill,<br>Elderly,<br>Stout | Equality,<br>Foreign,<br>Conference,<br>Superiority,<br>Dominance,<br>Discrimination<br>,<br>Blond,<br>Ballot,<br>Illiterate |
| | Entities | Horseman,<br>Snow,<br>Ghost,<br>Substance,<br>Marble,<br>Teeth,<br>Man,<br>Stone,<br>Egg,<br>Linen | Lounge,<br>Snow,<br>Flock,<br>Negro,<br>Wool,<br>Car,<br>Race,<br>Foam,<br>Marble,<br>Sheep | Snow,<br>Gorilla,<br>Negro,<br>Citizen,<br>Male,<br>Marble,<br>Race,<br>Nationality,<br>Shoes,<br>Column | Model,<br>Negro,<br>Clan,<br>Race,<br>Caste,<br>Worker,<br>Man,<br>Kid,<br>Tail,<br>Layer | Message,<br>Elephant,<br>Bulk,<br>Race,<br>Dress,<br>Snow,<br>Negro,<br>Man,<br>Sledge,<br>Slave | Negro,<br>Man,<br>House,<br>Race,<br>Skull,<br>Kid,<br>Armament,<br>Stature,<br>Sheet,<br>Aluminum | Negro,<br>House,<br>Race,<br>Carpenter,<br>Man,<br>Children,<br>Voter,<br>Collar,<br>Farm,<br>Male |
| Black | Traits | Methodical,<br>Ugly,<br>Burglary,<br>Big,<br>Bushy,<br>Piracy,<br>Usher,<br>Ragged,<br>Huge,<br>Bearded | Huge,<br>Bulky,<br>Unintelligible,<br>Heavy,<br>Stiff,<br>Piracy,<br>Ugly,<br>Appalling,<br>Foul,<br>Big | Ruin,<br>Huge,<br>Venomous,<br>Grin,<br>Ugly,<br>Villain,<br>Dark,<br>Scratch,<br>Hideous,<br>Infernal | Ugly,<br>Huge,<br>Stupid,<br>Buffer,<br>Horned,<br>Hideous,<br>Big,<br>Runaway,<br>Large,<br>Bored | Ugly,<br>Horned,<br>Sleek,<br>Huge,<br>Elderly,<br>Big,<br>Bearded,<br>Heavy,<br>Disguise,<br>Nether | Bearded,<br>Huge,<br>Flat,<br>Ugly,<br>Shiny,<br>Heavy,<br>Dark,<br>Ominous,<br>Frighten,<br>Shabby | Blockade,<br>Piracy,<br>Extermination,<br>Extremity,<br>Huge,<br>Enormous,<br>Horror,<br>Ugly,<br>Slaughter,<br>Vast |
| | Entities | Goat, | Hole, | Devil, | Snake, | Mane, | Hole, | Contraband, |

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|---|---|---|---|---|---|---|---|---|
| | | Hole,<br>Scrap,<br>African,<br>Mail,<br>Raven,<br>Coal,<br>Hair,<br>Bag,<br>Gull | Helmet,<br>Jet,<br>Monster,<br>Elephant,<br>Zebra,<br>Coal,<br>Dog,<br>Gull,<br>Ass | Hole,<br>Gull,<br>Raven,<br>Slave,<br>Beard,<br>Abyss,<br>Gang,<br>Panther,<br>Coward | Coal,<br>Pit,<br>Mire,<br>Hawk,<br>Raven,<br>Devil,<br>Ebony,<br>Slave,<br>Abyss | Devil,<br>Head,<br>Donkey,<br>Jaws,<br>Sledge,<br>Pit,<br>Gull,<br>Snout,<br>Hell | Tail,<br>Slave,<br>Head,<br>Sea,<br>Fleet,<br>Elephant,<br>Whiskers,<br>Abyss,<br>Jet | Hell,<br>Slave,<br>Hole,<br>Cave,<br>Fellow,<br>Tail,<br>Skull,<br>Devil,<br>Sea |
| Red | Traits | Heat,<br>Hot,<br>Heating,<br>Current,<br>Limp,<br>Cross,<br>Decomposition,<br>Thirst,<br>Bored,<br>Reduction | Hot,<br>Fiery,<br>Impact,<br>Bored,<br>Cross,<br>Kinetic,<br>Heat,<br>Propulsion,<br>Heating,<br>Roast | Heat,<br>Hot,.<br>Heating,<br>Cross,<br>Fiery,<br>Roasted,<br>Welding,<br>Cubic,<br>Fierce,<br>Terrific | Hot,<br>destruction,<br>Heat,<br>Cross,<br>Flaming,<br>Fierce,<br>Reaction,Furio<br>us,<br>Heating,<br>Reduction | Cross,<br>Aid,<br>Heat,<br>Hot,<br>Arterial,<br>Invaluable,<br>Destruction,<br>Bravery,<br>Volunteer,<br>Heating | Cross,<br>Courage,<br>Honorary,<br>Patriotic,<br>Slaughter,<br>Brotherhood,<br>Heat,<br>Productivity,<br>Volunteer,<br>Royal | Cross,<br>Hot,<br>Brotherhood,<br>Morale,<br>Stubborn,<br>Revolutionary,<br>Aid,<br>Emission,<br>Efficiency,<br>Sensitivity |
| | Entities | Elephant,<br>Blood,<br>Furnace,<br>Pharaoh,<br>Wax,<br>Charcoal,<br>Radiation,<br>Lion,<br>Stove,<br>Lava | Vessel,<br>Furnace,<br>Pharaoh,<br>Blood,<br>Stove,<br>Poker,<br>Tape,<br>Ordeal,<br>Brick,<br>Crank | Dealer,<br>Blood,<br>Charcoal,<br>Furnace,<br>Stove,<br>Radiation,<br>Poker,<br>Iron,<br>Aggressor,<br>Fury | Hemoglobin,<br>Charcoal,<br>Blood,<br>Pig,<br>Furnace,<br>Iron,<br>Poker,<br>Tape,<br>Fire,<br>Vessel | Hemoglobin,<br>Blood,<br>Army,<br>Stove,<br>Tape,<br>Ambulance,<br>Stimulus,<br>Metal,<br>Fireplace,<br>Serum | Boy,<br>Hemoglobin,<br>Blood,<br>Army,<br>Fraternity,<br>Membership,<br>Banner,<br>Lion,<br>Lava,<br>Tape | Tape,<br>Army,<br>Hemoglobin,<br>Blood,<br>Soviet,<br>Nucleus,<br>League,<br>Fleet,<br>Communist,<br>Plasma |
| Green | Traits | Grassy,<br>Shady, | Shady,<br>Leafy, | Flowery,<br>Shady, | Grassy,<br>Shady, | Grassy,<br>Historical, | Flowery,<br>Leafy, | Sage,<br>Leafy, |

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| | | Fertile,<br>Rural,<br>Fruitful,<br>Breezy,<br>Flowery,<br>Sunny,<br>Spacious,<br>Delightful | Flowery,<br>Fruitful,<br>Delightful,<br>Housekeeping,<br>Rural,<br>Hop,<br>Grassy,<br>Hilly, | Grassy,<br>Lush,<br>Sermon,<br>Accessible,<br>Lonesome,<br>Leafy,<br>Elementary,<br>Meditate | Elementary,<br>Gardening,<br>Thorny,<br>Fruitful,<br>Logic,<br>Sweet,<br>Feed,<br>Fresh | Botanical,<br>Bliss,<br>Fertile,<br>Organic,<br>Suburban,<br>Spacious,<br>Shady,<br>Alive | Solitude,<br>Pleasant,<br>Lie,<br>Shady,<br>Aquatic,<br>Botanical,<br>Overgrown,<br>Grassy | Fresh,<br>New,<br>Flourish,<br>Shady,<br>Creative,<br>Feed,<br>Gardening,<br>Wholesome |
| | Entities | Grass,<br>Orchard,<br>Pasture,<br>Meadow,<br>Garden,<br>Hill,<br>Lawn,<br>Lettuce,<br>Turf,<br>Farm | Registry,<br>Orchard,<br>Grass,<br>Herb,<br>Meadow,<br>Garden,<br>Park,<br>Grove,<br>Field,<br>Woodland | Oasis,<br>University,<br>Grass,<br>Herb,<br>Turf,<br>Plant,<br>Garden,<br>Orchard,<br>Park,<br>Greenhouse | Reviewer,<br>Grass,<br>Orchard,<br>Grove,<br>Turf,<br>Lawn,<br>Meadow,<br>Field,<br>Herb,<br>Cornfield | Grass,<br>Grove,<br>Forest,<br>Economics,<br>Orchard,<br>Spring,<br>University,<br>Garden,<br>Manure,<br>Cricket | Wave,<br>Redwood,<br>Grass,<br>Foliage,<br>University,<br>Park,<br>Turf,<br>Meadow,<br>Prairie,<br>Woodland | Radiation,<br>Orchard,<br>Grass,<br>Hill,<br>Terrace,<br>Spinach,<br>University,<br>Avenue,<br>Philosophy,<br>Meadow |
| Blue | Traits | Bright,<br>Distant,<br>Clear,<br>Sparkling,<br>Float,<br>Lovely,<br>Beautiful,<br>Tranquil,<br>Luminous,<br>Calm | Serene,<br>Aerial,<br>Dreamy,<br>Bright,<br>Sparkling,<br>Dim,<br>Placid,<br>Follow,<br>Distant,<br>Cascade | Clear,<br>Plain,<br>Bright,<br>Luminous,<br>Focus,<br>Placid,<br>Blond,<br>Wide,<br>Cascade,<br>Float | Conquer,<br>Misty,<br>Cascade,<br>Clear,<br>Lovely,<br>serene,<br>Lull,<br>Rippling,<br>Mild,<br>Retrospect | Sparkling,<br>Bright,<br>Beautiful,<br>Clear,<br>Wide,<br>Brightness,<br>Frosty,<br>Towering,<br>Misty,<br>Calm | Clear,<br>Lucid,<br>Sparkling,<br>Misty,<br>Luminous,<br>Clarity,<br>Reflect,<br>Dreamy,<br>Serene,<br>Magnetic | Ghostly,<br>Visible,<br>Magnetic,<br>Luminous,<br>Misty,<br>Fair,<br>Serene,<br>Sparkling,<br>Distant,<br>Placid |

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| | Entities | Sky,<br>Firmament,<br>Heaven,<br>Ocean,<br>Rainbow,<br>Orb,<br>Sun,<br>Flash,<br>Sunshine,<br>Mist | Sky,<br>Heaven,<br>Haze,<br>Firmament,<br>Chime,<br>Clouds,<br>Sheet,<br>Hymn,<br>Ocean,<br>Abyss | Sky,<br>Firmament,<br>Ocean,<br>Abyss,<br>Heaven,<br>Clouds,<br>Sea,<br>Apron,<br>Perspective,<br>Petticoat | Sky,<br>Firmament,<br>Heaven,<br>Clouds,<br>Haze,<br>Iceberg,<br>Ocean,<br>Sapphire,<br>Bayou,<br>Cloud | Sky,<br>Firmament,<br>Heaven,<br>Sea,<br>Gap,<br>Shirt,<br>Iodine,<br>Clouds,<br>Sunset,<br>Saline | Sky,<br>Sapphire,<br>Haze,<br>Lagoon,<br>Sunset,<br>Flash,<br>Heaven,<br>Sea,<br>Fairy,<br>Ocean | Sky,<br>Heaven,<br>Ocean,<br>Firmament,<br>Waterfall,<br>Lagoon,<br>Air,<br>Moonlight,<br>Admiral,<br>Milky |
| Yellow | Traits | Acute,<br>Hysteria,<br>Contagious,<br>Atrophy,<br>Infectious,<br>Decompose,<br>Poisoning,<br>Focus,<br>Contagion,<br>Infection | Atrophy,<br>Acute,<br>Contagious,<br>Infectious,<br>Vomit,<br>Mania,<br>Hysteria,<br>Decompose,<br>Putrid,<br>Inflammation | Atrophy,<br>Acute,<br>Infectious,<br>Contagious,<br>Scourge,<br>Fatal,<br>Delirium,<br>Insanity,<br>Malignant,<br>Inflammation | Sensitive,<br>Infectious,<br>Acute,<br>Atrophy,<br>Infection,<br>Contagion,<br>Contagious,<br>Poisonous,<br>Hysteria,<br>Poisoning | Acute,<br>Infectious,<br>Contagious,<br>Poisoning,<br>Atrophy,<br>Infection,<br>Delirium,<br>Toxic,<br>Transmission,<br>Sickness | Infectious,<br>Contagious,<br>Acute,<br>Poisoning,<br>Infection,<br>Venereal,<br>Atrophy,<br>Prevention,<br>Sickness,<br>Attack | Burglary,<br>Infectious,<br>Contagious,<br>Infection,<br>Acute,<br>Venereal,<br>Outbreak,<br>Attack,<br>Hemorrhage,<br>Atrophy |
| | Entities | Cholera,<br>Typhoid,<br>Fever,<br>Epidemic,<br>Measles,<br>Pox,<br>Plague,<br>Disease,<br>Pestilence,<br>Smallpox | Torch,<br>Influenza,<br>Cholera,<br>Fever,<br>Typhoid,<br>Measles,<br>Epidemic,<br>Smallpox,<br>Pox,<br>Disease | Water,<br>Cholera,<br>Epidemic,<br>Fever,<br>Smallpox,<br>Pox,<br>Measles,<br>Typhoid,<br>Disease,<br>Anemia | Cholera,<br>Epidemic,<br>Typhoid,<br>Malaria,<br>Fever,<br>Smallpox,<br>Influenza,<br>Disease,<br>Measles,<br>Pox | Cholera,<br>Fever,<br>Epidemic,<br>Malaria,<br>Typhoid,<br>Plague,<br>Smallpox,<br>Disease,<br>Influenza,<br>Measles | Childhood,<br>Epidemic,<br>Fever,<br>Typhoid,<br>Malaria,<br>Influenza,<br>Cholera,<br>Measles,<br>Smallpox,<br>Plague | Fever,<br>Epidemic,<br>Malaria,<br>Influenza,<br>Cholera,<br>Smallpox,<br>Measles,<br>Typhoid,<br>Disease,<br>Plague |

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| Orange | Traits | Sovereign, Reigning, Loyal, Amnesty, Sovereignty, Negotiate, Comply, Intriguing, Intimidate, Abandon | Sovereignty, Sovereign, Peel, Reigning, Loyal, Fidelity, Alliance, Electoral, Ripe, Generosity | Sovereign, Sovereignty, Invade, Participation, Peel, Ally, Negotiate, Alliance, Comply, Interview | Negotiation, Peel, Alliance, Sovereignty, Sovereign, Negotiate, Interview, Reigning, Opposition, Evacuation | Sovereignty, Sovereign, Peel, Cordial, Consolidate, Hereditary, Opposition, Free, Alliance, Allegiance | Sovereignty, Peel, Sovereign, Reigning, Hereditary, Announce, Allegiance, Assembly, Legitimate, Alcoholic | Sovereign, Ally, Loyal, Peel, Free, Electoral, Liberty, Hereditary, Develop, Cooperate |
| | Entities | Prince, Princess, Duke, King, Dictatorship, Emperor, Highness, Marquis, Government, Monarch | Champagne, Prince, Princess, Highness, Enterprise, Dictatorship, Duke, Archduke, Juice, Government | Duke, Prince, Highness, Marquis, King, Princess, Duchess, Pretender, Liege, Mango | Prince, Duke, Archduke, Government, Highness, Pretender, Princess, Emperor, Marquis, Confederacy | Prince Duke Government Princess Juice Lemon Highness Primate Catholic King | Prince, Lemon, Juice, Duke, Grapefruit, Highness, Citrus, Countess, Heiress, Archduke | Lemon, Juice, Prince, Citrus, Duke, Highness, King, Toast, Pretender, Grapefruit |
| Purple | Traits | Indistinct, Regal, Greatness, Extravagant, Imperial, Lofty, Aspiring, Visionary, Rapture, Splendor | Regal, Greatness, Aspiring, Pomp, Grandeur, Prerogative, Dignity, Aspire, Virtue, Shadowy | Pomp, Sublime, Shadowy, Splendor, Voluptuous, Grandeur, Regal, Magnificence, Imperial, Lofty | Reserved, Regal, Pomp, Glory, Greatness, Imperial, Flowery, Shadowy, Aspire, Splendor | Splendor, Regal, Serene, Magnificence, Sublime, Repose, Glory, Pomp, Dignity, Enchanted | Loveliness, Pomp, Grandeur, Sadness, Enchanted, Voluptuous, Splendor, Amaze, Glory, Serene | Sorrow, Bestow, Prudence, Perish, Dazzling, Blush, Feign, Splendor, Vile, Insolent |

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| | Entities | Tiara, Priesthood, Insignia, Linen, Chime, Pinnacle, Fade, Ransom, Hierarchy, Haze | Robe, Toga, Insignia, Haze, Gold, Tyrant, Citizenship, Coliseum, Realm, Peer | Ode, Tiara, Tyrant, Monarch, Imagery, Robe, Peer, Throne, Woe, Pinnacle | Insignia, Tiara, Toga, Priesthood, Twilight, Wreath, Clouds, Coliseum, Robe, Tinsel | Muse, Knighthood, Insignia, Imagery, Realm, Treasure, Monarch, Throne, Perfume, Tinsel | Twilight, Firmament, Clouds, Orb, Veil, Sapphire, Haze, Moor, Liege, Urn | Monarch, Chariot, Tyrant, Robe, Insignia, Apparel, Primrose, Bard, Mogul, Muse |
| Brown | Traits | Major, Fry, Pathological, Autobiographical, Analytical, Impoverished, Prehistoric, Rudimentary, Manual, Bankrupt | Major, Fry, Eclectic, Senior, Curt, Weld, Moody, Prominent, Bland, Lean | Insure, Major, Senior, Condensed, Autobiographical, Weld, Hunt, Honorary, Reputable, Cook | Civility, Senior, Major, Mate, Eclectic, Surgical, Cook, Bland, Philosophical, Crisp | Discretion, Major, Fry, Cook, Bake, Manufacturing, Judge, Education, Justice, Elder | Major, Fry, Eclectic, Elder, Merit, Manufacturing, Genteel, Punctual, Housekeeping, Tuck | Delinquent, Fry, Bake, Manufacturing, Senior, Dicey, Permission, History, Pessimist, Moody |
| | Entities | Music, Hooker, University, Director, Company, Attorney, Professor, Colleague, College, Biography | Geologist, Nanny, Professor, University, Curator, Seminary, Sir, Roach, Tutor, Biography | Professor, Mister, Doctor, Friend, Blacksmith, Autobiography, Carpenter, Colleague, Sir, Reverend | Hood, Professor, Carpenter, University, Alderman, Granddaughter, Sergeant, Firm, Economic, Assistant | Professor, Oven, Badger, Coke, Carpenter, Bacon, Autobiography, Encyclopedia, Firm, Grandfather | Dill, Bacon, Reverend, Novelist, Barrister, Hooker, Philosophy, Professor, Company, Craftsman | Bacon, Firm, Badger, Professor, Sir, Oven, Hooker, Geologist, Almanac, Company |

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| Pink | Traits | Delicacy, Delicate, Politeness, Formality, Decency, Courtesy, Decorative, Convenience, Decorum, Flush | Politeness, Delicacy, Selfishness, Caress, Courtesy, Delicate, Embarrassment, Prudence, Fairness, Modesty | Lovely, Delicate, Delicacy, Frail, Childish, Dainty, Propriety, Childlike, Trifle, Feminine | Aggravation, Delicate, Delicacy, Politeness, Refinement, Dainty, Elegance, Modesty, Tidy, Propriety | Classic, Bloom, Exquisite, Softness, Delicate, Delicacy, Excellence, Faint, Delicious, Dainty | Upset, Delicate, Benevolence, Bloom, Balmy, Health, Perfect, Compatible, Civility, Perfection | Blush, Delicate, Flush, Bloom, Innocence, Satisfied, Rudimentary, Permanent, Maturity, Perfection |
| | Entities | Counsel, Petticoat, Costume, Etiquette, Ribbon, Dress, Bit, Lace, Satin, Gauze | Model, Petticoat, Actress, Bouquet, Occult, Etiquette, Skill, Girl, Headache, Comb | Girl, Complexion, Appetite, Dress, Handkerchief, Shawl, Motherhood, Gown, Sex, Ribbon | Bit, Pansy, Flavor, Baby, Papa, Ornament, Girl, Flower, Pickle, Animation | Flavor, Perfume, Odor, Girl, Lip, Complexion, Baby, Salon, Hair, Indicator, | Flavor, Appearance, Perfume, Pregnancy, Pony, Gauze, Girl, Odor, Flesh, Scent | Girl, Puberty, Indicator, Maiden, Rapport, Salon, Blouse, Satin, Lip, Membrane |

| Colors | Words | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
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| White | Traits | Clerical, Conference, Elderly, Mate, Large, Mingle, Elite, Ballot, Professional, Burden | Ranking, Intimate, Professional，Deceased，Elderly, Equality, Vote, Inferiority, Employment, Occupational | Racial, Dominance, Elite, Aging, Equality, Conference, Ranking, Superiority, Party, Privileged | Equality, Vote, Solidarity, Superiority, Civilian, Racial, Decent, Ranking, Brotherhood, Elderly | Dominance, Equality, Burden, Elite, Ranking, Superiority, Aging, Clerical, Racial, Privilege | Superiority, Supremacy, Convict, Slaughter, Privileged, Discrimination, Racial, Dominance |
| | Entities | Tenure, Negro, Race, House, Class, Female, Masses, Ancestry, Male, Children | Educator, Negro, Collar, Male, Man, Female, Children, House, , Race, Bridegroom | Negro，Collar，Race，Class，Family，Man，House，Ghetto，Caste，Suburb | Negro，Collar，Male，Race，Class，Man，House，Family，Job，Senate | House，Collar，Race，Male，Senate，Staff，Female，Class，Negro，Deathbed | Male, Racist，Female，House，Class，Collar，Senate，Race, African, Racism |

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| Black | Traits | Huge,<br>Violent,<br>Oppression,<br>Blackness,<br>Nasty,<br>Sweep,<br>Sharp,<br>Darkness,<br>Big,<br>Veiled | Intimate,<br>Piracy,<br>Naval,<br>Trade,<br>Slaughter,<br>Ominous,<br>Uncouth,<br>Underworld,<br>War,<br>Enraged | Killing,<br>Justice,<br>Emancipation,<br>Slaughter,<br>Extermination,<br>Oppression,<br>Injustice,<br>Convict,<br>Magic,<br>Protest | Emancipation,<br>Equality,<br>Poor,<br>Racial,<br>Solidarity,<br>Plight,<br>Participation,<br>Liberation,<br>Nonviolent,<br>Poverty | Massacre,<br>Racial,<br>Oppression,<br>Plight,<br>Discrimination,<br>Crime,<br>Elderly,<br>Ethnic,<br>Emancipation,<br>Literacy | Gay,<br>Plight,<br>Spirituality,<br>Homicide,<br>Masculinity,<br>Emancipation,<br>Portray,<br>Solidarity,<br>Poor,<br>Poverty |
| | Entities | Sea,<br>Slavery,<br>Terrorism,<br>Slave,<br>Contraband,<br>Chalk,<br>Stockings,<br>Skull,<br>Glacier,<br>Cap | Gull,<br>Hood,<br>Fleet,<br>Sea,<br>Hawk,<br>Devil,<br>Petticoat,<br>Dog,<br>Admiralty,<br>Hangman | Slavery,<br>Slave,<br>Negro,<br>Witchcraft,<br>Class,<br>Devil,<br>Moustache,<br>Hell,<br>Nigger,<br>Ghetto | Negro,<br>Class,<br>Ghetto,<br>Racism,<br>Slave,<br>African,<br>Race,<br>Catholic,<br>Seaboard,<br>Myth | Negro,<br>Slave,<br>Racism,<br>Slavery,<br>Female,<br>African,<br>Theology,<br>Documentary,<br>Sexist,<br>Children | Negro,<br>African,<br>Activist,<br>Female,<br>Class,<br>Slavery,<br>Slave,<br>Male,<br>Race,<br>Racist |
| Red | Traits | Cross,<br>Strength,<br>Energy,<br>Heroism,<br>Liberation,<br>Resistance,<br>Volunteer,<br>Revolutionary,<br>Aid,<br>Capacity | Cross,<br>Regeneration,<br>Destruction,<br>Bravery,<br>Courage,<br>Heroism,<br>Liberation,<br>Aid,<br>Efficiency,<br>Expedition | Cross,<br>Revolutionary,<br>Transfusion,<br>Volunteer,<br>Liberation,<br>Suspension,<br>Destruction,<br>Combat,<br>Allied,<br>Offensive | Cross,<br>Guard,<br>Liberation,<br>Blockade,<br>Transfusion,<br>Courage,<br>Detachment,<br>Oppose,<br>Revolutionary,<br>Excessive | Transfusion,<br>Cross,<br>Reduction,<br>Destruction,<br>Interfere,<br>Revolutionary,<br>Cardiac,<br>Activation,<br>Newborn,<br>Decrease | Diversion,<br>Cross,<br>Guard，Break<br>down,<br>Cooperate,<br>Transfusion,<br>Negotiate,<br>Deployment,<br>Destruction，<br>Armed |

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| | Entities | Hero,<br>Hemoglobin,<br>Army,<br>Organizer,<br>Blood,<br>Ambulance,<br>Plasma,<br>Commander,<br>Soviet,<br>Comrade | Army,<br>Plasma,<br>Hemoglobin,<br>Blood,<br>League,<br>Flag,<br>Badge,<br>Corps,<br>Nucleus,<br>Fleet | Hog,<br>Hemoglobin,<br>Army,<br>Blood,<br>Banner,<br>Soviet,<br>Communist,<br>League,<br>Flag,<br>Plasma | Blood,<br>Army,<br>Hemoglobin,<br>Nucleus,<br>Iron,<br>Tape,<br>Flag,<br>Spleen,<br>Guerrilla,<br>Plasma | Blood,<br>Hemoglobin,<br>Plasma,<br>Army,<br>Anemia,<br>Iron,<br>Tape,<br>Catalyst,<br>Membrane,<br>Communist | Hemoglobin,<br>Blood,<br>Army,<br>Anemia,<br>Iron,<br>Tape,<br>Catalyst,<br>Membrane,<br>Communist |
| Green | Traits | Smite,<br>Leafy,<br>Pleasant,<br>Thrive,<br>Delicious,<br>Flowery,<br>Live,<br>Crooked,<br>Aquatic,<br>Fertile | Weed,<br>Gay,<br>Follow,<br>Gardening,<br>Botanical,<br>Creative,<br>Pleasant,<br>Blossom,<br>Enchanted,<br>Aquatic | Browse,<br>Pleasant,<br>Lush,<br>Grassy,<br>Flowery,<br>Leafy,<br>Potted,<br>Logic,<br>Shady,<br>Sweet | Leafy,<br>Comical,<br>Lush,<br>Meek,<br>Tranquil,<br>Potted,<br>Pleasant,<br>Boating,<br>Refreshing,<br>Sage | Leafy,<br>Pleasant,<br>Sunny,<br>Grateful,<br>Popular,<br>Fertile,<br>Lush,<br>Sweet,<br>Extension,<br>Intellect | Salted,<br>Leafy,<br>Dynamic,<br>Pleasant,<br>Conservation,<br>Console,<br>Wilt,<br>Productivity,<br>Aptitude,<br>Mount |
| | Entities | Grass,<br>Garden,<br>Turf,<br>Orchard,<br>Meadow,<br>Hill,<br>Manure,<br>Tree,<br>Spinach,<br>Peas | Grass,<br>Garden,<br>Orchard,<br>Manure,<br>Pasture,<br>Asparagus,<br>Vegetable,<br>Lawn,<br>Alfalfa,<br>Herb | Grass,<br>Garden,<br>University,<br>Grove,<br>Manure,<br>Lawn,<br>Hill,<br>Orchard,<br>Vine,<br>Eucalyptus | Manure,<br>Peanut,<br>University,<br>Avocado,<br>Lettuce,<br>Grass,<br>Celery,<br>Apple,<br>Barley,<br>Vegetable | Spinach,<br>Grass,<br>Broccoli,<br>Celery,<br>Bean,<br>Okra,<br>Asparagus,<br>Meadow,<br>Park,<br>Cauliflower | Celery,<br>Meadow,<br>Agriculture,<br>Foundation,<br>Cucumber,<br>Broccoli,<br>Cauliflower,<br>Spinach,<br>Grass,<br>Manure |

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| Blue | Traits | Mastery,<br>Objectivity,<br>Clear,<br>Misty,<br>Terrifying,<br>Fair,<br>Pure,<br>Uniform,<br>Towering,<br>Saturation | Serene,<br>Clear,<br>Visible,<br>Fair,<br>Brightness,<br>Ludicrous,<br>Surge,<br>Western,<br>Ultraviolet,<br>Spectral | Skilled,<br>Occupational,<br>Cross,<br>Clerical,<br>Reflect,<br>Shining,<br>Ultraviolet,<br>Lucid,<br>Luminous,<br>Clear | Skilled,<br>Occupational,<br>Manual,<br>Girlish,<br>Low,<br>Supple,<br>Chilly,<br>Clerical,<br>Shining,<br>Myriad | Frighten,<br>Daring,<br>Bright,<br>Terrifying,<br>Casual,<br>Mysterious,<br>Clerical,<br>Skilled,<br>Uniform,<br>Shining | Boating,<br>Skilled,<br>Luminous,<br>Ultraviolet,<br>Manufacturing,<br>Safety,<br>Productivity,<br>Bookkeeping,<br>Sensitive,<br>Cooperative |
| | Entities | Sky,<br>Firmament,<br>Shirt,<br>Skirt,<br>Sailor,<br>Jacket,<br>Frock,<br>Sanatorium,<br>Ocean,<br>Jeans | Sky,<br>Ocean,<br>Heaven,<br>Sea,<br>Shield,<br>Firmament,<br>Clouds,<br>Landscape,<br>Smoke,<br>Haze | Sky,<br>Collar,<br>Shield,<br>Laundry,<br>Handkerchief,<br>Arm,<br>Ocean,<br>Landscape,<br>Firmament,<br>Haze | Sky,<br>Collar,<br>Shield,<br>Clouds,<br>Jeans,<br>Worker,<br>Smoke,<br>Technician,<br>Lace,<br>Job | Velvet,<br>Sky,<br>Shield,<br>Devil,<br>Collar,<br>Shroud,<br>Heaven,<br>Sunshine,<br>Organizer,<br>Worker | Radiation,<br>Sky,<br>Shield,<br>Collar,<br>Collar,<br>Haze,<br>Clouds,<br>Net,<br>Freshwater,<br>Ocean,<br>Jeans |

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|---|---|---|---|---|---|---|---|
| Yellow | Traits | Infectious, Tick, Poisoning, Raging, Transmission, Infection, Acute, Contagion, Atrophy, Septic | Infectious, Acute, Contagious, Raging, Sickness, Outbreak, Nausea, Transmission, Infection, Atrophy | Spread, Tick, Infectious, Acute, Contagious, Venereal, Outbreak, Sickness, Transmission, Infection | Infectious, Tick, Contagious, Poisoning, Transmission, Infection, Allergic, Frequent, Sickness, Diffuse | Infectious, Certificate, Outbreak, Limitless, Infection, Hemorrhage, Wilt, Tick, Venereal, Inflammation | Infectious, Certificate, Tick, Contagious, Circulate, Fecal, Rash, Peril, Wrestle, Cure. |
| | Entities | Cholera, Fever, Malaria, Epidemic, Typhoid, Plague, Smallpox, Disease, Influenza, Measles | Fever, Epidemic, Typhoid, Smallpox, Cholera, Malaria, Plague, Measles, Influenza, Disease | Fever, Typhoid, Smallpox, Epidemic, Malaria, Measles, Plague, Cholera, Pox, Influenza | Malaria, Fever, Typhoid, Smallpox, Cholera, Epidemic, Measles, Plague, Influenza, Pox | Malaria, Fever, Typhoid, Cholera, Measles, Epidemic, Pox, Smallpox, Plague, Abscess | Fever, Malaria, Cholera, Typhoid, Pox, Measles, Pad, Epidemic, Influenza, Smallpox |

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| Orange | Traits | Peel,<br>Reigning,<br>Free,<br>Buffer,<br>Neutralize,<br>Select,<br>Sovereignty,<br>Cooperative,<br>Native,<br>Allegiance | Peel,<br>Allegiance,<br>Free,<br>Sovereign,<br>Federal,<br>Capture,<br>Alliance,<br>Majesty,<br>Assembly,<br>Grand | Nominate,<br>Peel,<br>Sovereign,<br>Grand,<br>Notification,<br>Free,<br>Notify,<br>Assembly,<br>Ally,<br>Subscription | Belligerent,<br>Sovereignty,<br>Invasion,<br>Peel,<br>Free,<br>Desist,<br>Sovereign,<br>Authority,<br>Grand,<br>Loyal | Liability,<br>Zest,<br>Combine,<br>Alcoholic,<br>Loyal,<br>Peel,<br>Intrusion,<br>Coexist,<br>Prospect,<br>Hazardous, | Zest,<br>Peel,<br>Free,<br>Grand,<br>Federal,<br>Subscription,<br>Spice,<br>Academic,<br>Liability,<br>Fresh |
| | Entities | Prince,<br>Lemon,<br>Juice,<br>Toast,<br>Highness,<br>Pineapple,<br>Princess,<br>Grapefruit,<br>Coronation,<br>Citrus | Duke,<br>Lemon,<br>Juice,<br>Prince,<br>Citrus,<br>Highness,<br>King,<br>Toast,<br>Princess,<br>Grapefruit | Highness,<br>Duke,<br>Prince,<br>Juice,<br>Toast,<br>Grapefruit,<br>Apricot,<br>Ruler,<br>Successor,<br>Princess | Juice,<br>Highness,<br>Toast,<br>Breakfast,<br>Throne,<br>Coronation,<br>Soda,<br>Duke,<br>Citrus,<br>Cranberry | Juice,<br>Soda,<br>Prince,<br>Lime,<br>Grapefruit,<br>Champagne,<br>Pineapple,<br>Lemon,<br>Avocado,<br>Toast | Juice,<br>champagne,<br>Soda, Lemon,<br>Grapefruit,<br>Coffee, Teapot,<br>Cinnamon,<br>Lime,<br>Cocoa |
| Purple | Traits | Sublime,<br>Regeneration,<br>Grandeur,<br>Slumber,<br>Lofty,<br>Noble,<br>Serene,<br>Penitent,<br>Prodigious,<br>Refresh | Splendor,<br>Obscurity,<br>Greatness,<br>Pomp,<br>Aspire,<br>Infect,<br>Rapture,<br>Sublime,<br>Blush,<br>Hapless | Bestow,<br>Lofty,<br>Grandeur,<br>Voluptuous,<br>Serene,<br>Ecstasy,<br>Sensual,<br>Godlike,<br>Regal,<br>Gorgeous | Sublime,<br>Sensuality,<br>Spotless,<br>Gorgeous,<br>Pomp,<br>Untroubled,<br>Workmanship,<br>Forgiveness,<br>Wickedness,<br>Trample | Pomp,<br>Gloom,<br>Riches,<br>Applause,<br>Impenetrable,<br>Nauseous,<br>Glory,<br>Bestow,<br>Aroused,<br>Agony | Fantastic,<br>Awed,<br>Rapture,<br>Thrive, Rose,<br>Exemplary,<br>Deformity,<br>Displeasure,<br>Horror,<br>Hideous |

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|---|---|---|---|---|---|---|---|
| | Entities | Twilight,<br>Ruffian,<br>Muse,<br>Conqueror,<br>Halo,<br>Medal,<br>Emperor,<br>Seer,<br>Monarch,<br>Vale | Countenance,<br>Congratulations<br>,Halo,<br>Sap,<br>Toga,<br>Mirage,<br>Ornament,<br>Mist,<br>Phantom,<br>Gleam | Orb,<br>Chime,<br>Carnage,<br>Trophy,<br>Heaven,<br>Tinsel,<br>Countenance,<br>Medal,<br>Ornament,<br>Martyr | Hue,<br>Toga,<br>Velvet,<br>Shroud,<br>Urchin,<br>Mist,<br>Robe,<br>Thunderbolt,<br>Emerald,<br>Turban | Earring,<br>Viper,<br>Blaze,<br>Bacteria,<br>Countenance,<br>Foam,<br>Gem,<br>Gold,<br>Fog,<br>Clouds | Hero,<br>Medal,<br>Jasmine,<br>Gold,<br>Flower,<br>Wreath,<br>Bacteria,<br>Countenance,<br>Fiend, Ode |
| Brown | Traits | Fry,<br>Historical,<br>History,<br>Delinquency,<br>Delinquent,<br>Charitable,<br>Logic,<br>Managerial,<br>Genteel,<br>Permission | Cook,<br>Fry<br>Permission,<br>Bake,<br>Criminal,<br>Retrospect,<br>Education,<br>Dicey,<br>Sorry,<br>Senior | Little,<br>Education,<br>Fry,<br>Fried,<br>Cook,<br>Grieving,<br>Elder,<br>Knit,<br>Schooling,<br>Permission | Fry,<br>Cook,<br>Little,<br>Permission,<br>Education,<br>Bake,<br>Fried,<br>Retrospect,<br>Hunt,<br>Tart | Fry,<br>Cook,<br>Little,<br>Bury,<br>Supreme,<br>Permission,<br>Education,<br>Bake,<br>Satanic,<br>Candid | Education,<br>Permission,<br>Bake,<br>Little,<br>Fry,<br>Dizzy,<br>Supreme,<br>Politeness,<br>Kindness,<br>Blond |
| | Entities | Knapsack,<br>Bacon,<br>Company,<br>Journalism,<br>Biography,<br>Professor,<br>Obituary,<br>Assistant,<br>Sir,<br>Novelist | Professor,<br>Company,<br>Sir,<br>Reviewer,<br>Carpenter,<br>Fryer,<br>Assistant,<br>Reverend,<br>Coon,<br>Geography | Bacon,<br>Fryer,<br>Freeman,<br>Theology,<br>Company,<br>Reverend,<br>Professor,<br>Buster,<br>Clay,<br>Sir | Bacon,<br>Company,<br>Biography,<br>Freeman,<br>Screenplay,<br>Hick,<br>Autobiograph<br>y,<br>Board,<br>Pepper, | Bacon,<br>Molasses,<br>Biography,<br>Professor,<br>Fluff,<br>Hamburger,<br>Crust,<br>Foundation,<br>Hood,<br>Oven | Fryer,<br>Beacon,<br>Bacon,<br>Dough,<br>Prude,<br>Rice,<br>Sir,<br>Reverend,<br>Vampire,<br>Board |

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|---|---|---|---|---|---|---|---|
| | | | | | Carpenter | | |
| Pink | Traits | Fulfillment,<br>Serenity,<br>Delicate,<br>Patient,<br>Terrifying,<br>Bloom,<br>Pleasurable,<br>Trifle,<br>Candid<br>Blush | Convertible,<br>Youthful.<br>Paste,<br>Delicate,<br>Faint,<br>Bloom,<br>Blush,<br>Smile,<br>Outrageous,<br>Terrifying | Hospitable,<br>Bloom,<br>Delicate,<br>Delicacy,<br>Shortness,<br>Smile,<br>Serenity,<br>Confounded,<br>Fragrance,<br>Freshness | Graceful,<br>Irritable,<br>Delicate,<br>Blush,<br>Amiable,<br>Lovely,<br>Vile,<br>Juicy,<br>Limp,<br>Pleasing | Apprehensive,<br>Blush,<br>Delicacy,<br>Delicate,<br>Exquisite,<br>Fret,<br>Hopeful,<br>Tenderness,<br>Breathless,<br>Gloomy | Nude,<br>Delicate,<br>Softness,<br>Youngster,<br>Puffing,<br>Bake,<br>Vaginal,<br>Breathless,<br>Shortness,<br>Limp |
| | Entities | Satin,<br>Lip,<br>Puberty,<br>Recess,<br>Doll,<br>Malady,<br>Appearance,<br>Lace,<br>Complexion,<br>Flower | Doll,<br>Cheek,<br>Symptom,<br>Complexion,<br>Haze,<br>Appearance,<br>Attire,<br>Whit,<br>Headache,<br>Puberty | Chum,<br>Complication,<br>Flower,<br>Complexion,<br>Odor,<br>Venison,<br>Frock,<br>Cheek,<br>Headache,<br>Satin | Chum,<br>Petticoat,<br>Cheek,<br>Attire,<br>Scurvy,<br>Slut,<br>Panties,<br>Pansy,<br>Puberty,<br>Gauze | Cheek,<br>Genitalia,<br>Uterus,<br>Tissue,<br>Dough,<br>Lullaby,<br>Chicken,<br>Puppy,<br>Chum,<br>Symptom | Chum,<br>Vagina,<br>Meat,<br>Nanny,<br>Puppy,<br>Tongue,<br>Genitalia,<br>Toy,<br>Uterus,<br>Cervix |

Table 2. MAC score for top 10 traits and entities for 20 decades averagely

| Red | Traits | hot | cross | heat | heating | fiery | destruction | deployment | proximity | confrontation | anger |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.17642 | 0.17116 | 0.15917 | 0.14113 | 0.11778 | 0.11361 | 0.10365 | 0.094082 | 0.093402 | 0.092472 |
| | Entities | hemoglobin | blood | iron | furnace | plasma | soviet | poker | lion | fire | dragon |
| | | 0.22807 | 0.18727 | 0.14388 | 0.13885 | 0.13781 | 0.1353 | 0.13459 | 0.12571 | 0.12074 | 0.10795 |
| Green | Traits | shady | pleasant | leafy | flowery | fruitful | delightful | fertile | fresh | sunny | flourish |
| | | 0.17648 | 0.16087 | 0.16025 | 0.16003 | 0.14218 | 0.12918 | 0.12554 | 0.12465 | 0.12434 | 0.11755 |
| | Entities | grass | garden | meadow | orchard | herb | pasture | turf | lawn | grove | broccoli |
| | | 0.21124 | 0.18685 | 0.18617 | 0.18227 | 0.1726 | 0.16742 | 0.16292 | 0.16141 | 0.16118 | 0.1553 |
| Blue | Traits | clear | sparkling | bright | calm | serene | misty | luminous | fair | distant | dazzling |
| | | 0.13645 | 0.13324 | 0.12799 | 0.11971 | 0.11819 | 0.11812 | 0.1077 | 0.1054 | 0.10386 | 0.10031 |
| | Entities | sky | firmament | heaven | ocean | clouds | haze | sea | jeans | admiral | ribbon |
| | | 0.23664 | 0.16039 | 0.15056 | 0.13587 | 0.13255 | 0.1282 | 0.1135 | 0.10998 | 0.10954 | 0.10762 |
| Yellow | Traits | infectious | contagious | acute | atrophy | inflammation | poisoning | outbreak | malignant | venereal | sickness |
| | | 0.2151 | 0.20197 | 0.19155 | 0.16976 | 0.1587 | 0.14387 | 0.14103 | 0.13979 | 0.13713 | 0.13321 |
| | Entities | fever | cholera | typhoid | epidemic | malaria | smallpox | measles | pox | plague | influenza |
| | | 0.31474 | 0.29024 | 0.28085 | 0.27845 | 0.25147 | 0.24772 | 0.24131 | 0.23527 | 0.23435 | 0.23205 |
| White | Traits | equality | clean | elderly | dominance | armed | professionalism | pure | stereotype | bearded | nonviolent |
| | | 0.13768 | 0.1259 | 0.12488 | 0.11881 | 0.10372 | 0.096815 | 0.093225 | 0.092611 | 0.088049 | 0.08632 |
| | Entities | male | race | female | marble | snow | man | collar | egg | shirt | milk |
| | | 0.14833 | 0.1473 | 0.13922 | 0.13493 | 0.14223 | 0.13437 | 0.11498 | 0.11368 | 0.10132 | 0.091144 |
| Black | Traits | racist | huge | stereotype | piracy | ugly | big | dark | extermination | trade | monstrous |
| | | 0.13717 | 0.1296 | 0.12933 | 0.12275 | 0.11557 | 0.11472 | 0.10493 | 0.10326 | 0.10233 | 0.1007 |
| | Entities | negro | racism | slave | gull | hole | macho | African | voodoo | hawk | coal |
| | | 0.16033 | 0.15853 | 0.1528 | 0.14504 | 0.13939 | 0.13801 | 0.12999 | 0.12876 | 0.12508 | 0.11872 |
| Orange | Traits | sovereign | peel | reigning | alliance | allegiance | hereditary | invade | ally | proclamation | sovereignty |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.19808 | 0.18925 | 0.17625 | 0.17286 | 0.16569 | 0.15972 | 0.1551 | 0.13933 | 0.13866 | 0.13583 |
| | Entities | prince | princess | princess | duke | juice | archduke | king | lemon | grapefruit | citrus |
| | | 0.32064 | 0.25144 | 0.2457 | 0.2457 | 0.19338 | 0.19206 | 0.18905 | 0.18824 | 0.1863 | 0.18351 |
| Purple | Traits | pomp | regal | imperial | splendor | bestow | grandeur | greatness | royalty | dignity | glory |
| | | 0.20849 | 0.20248 | 0.18912 | 0.18527 | 0.17575 | 0.16855 | 0.16579 | 0.16435 | 0.16238 | 0.1609 |
| | Entities | robe | insignia | toga | tiara | monarch | priesthood | throne | knighthood | muse | crown |
| | | 0.15616 | 0.15248 | 0.15016 | 0.14144 | 0.14062 | 0.13447 | 0.13286 | 0.13206 | 0.12853 | 0.12711 |
| Brown | Traits | fry | bubbly | cook | major | bake | senior | bland | eclectic | tart | history |
| | | 0.15847 | 0.14697 | 0.13345 | 0.12837 | 0.12274 | 0.10519 | 0.10241 | 0.094251 | 0.090397 | 0.086496 |
| | Entities | fryer | bacon | professor | sir | hooker | university | reverend | hick | carpenter | roach |
| | | 0.17506 | 0.17473 | 0.16635 | 0.15243 | 0.14948 | 0.13579 | 0.13522 | 0.13349 | 0.12854 | 0.12841 |
| Pink | Traits | delicate | politeness | propriety | exquisite | elegance | bloom | blush | courtesy | beauty | modesty |
| | | 0.17609 | 0.14593 | 0.12124 | 0.1196 | 0.11488 | 0.1146 | 0.11456 | 0.1116 | 0.11134 | 0.11014 |
| | Entities | dress | girl | attire | lace | handkerchief | complexion | flower | flavor | perfume | chum |
| | | 0.10651 | 0.1027 | 0.10004 | 0.095836 | 0.092719 | 0.092472 | 0.092417 | 0.090833 | 0.0893 | 0.087754 |